Roger G. Kathol
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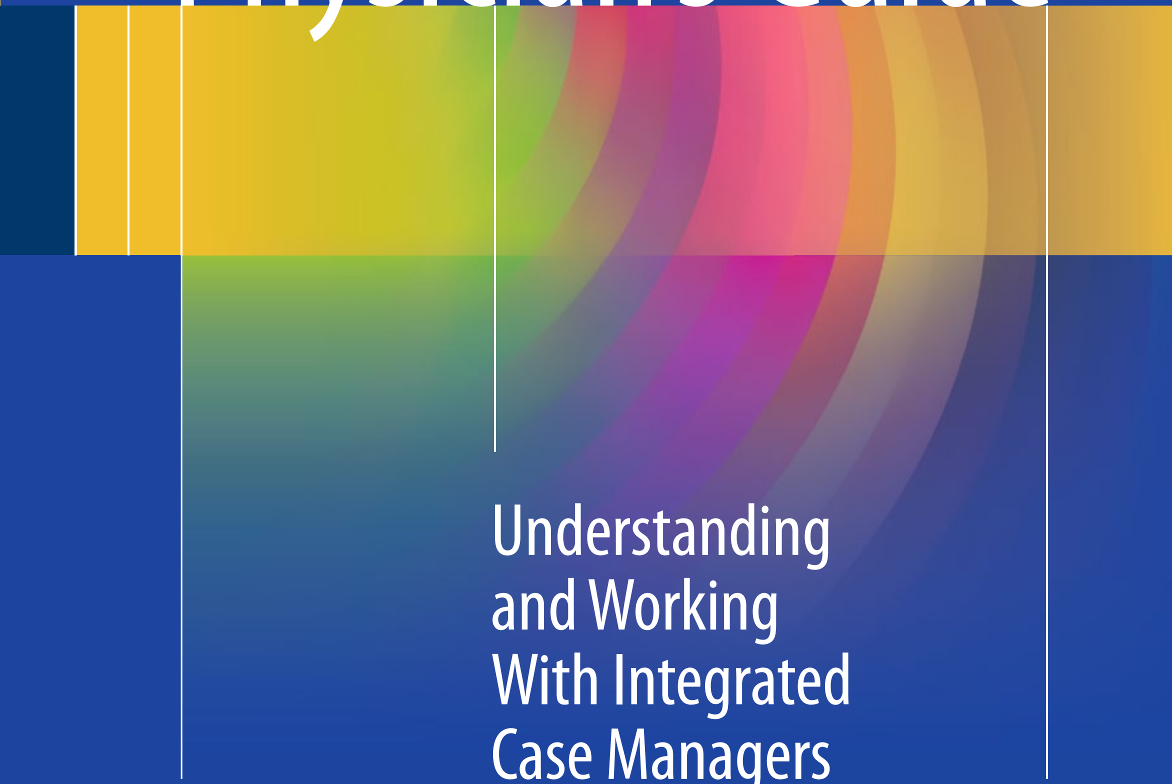
Physician's Guide



Understanding and Working With Integrated Case Managers

Springer

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Foreword

Improving the outcome for patients in our sophisticated healthcare systems is not straightforward. Many health service research studies have negative results on the patient level, and those who have positive results often cannot be implemented on a large scale. This is specifically true for comorbid complex patients.

An explosion of medical knowledge has led to a dramatic expansion of separate domains of knowledge and competencies, but many of these do not understand or communicate with each other. This has resulted in the fragmented care for patients with both medical and behavioral health complexity. And yet we know that outcomes for patients with complex health needs are related to the level of integration achieved with the care provided.

There are several ways to increase integration within healthcare systems. Most are implemented at the organizational level. However, successful programs typically have similar conceptualizations of triage, the approach to collaboration of care, and the roles that various healthcare contributors make. This is true at both the system and the care delivery level.

Regardless of what is done at the system level, quality of care starts with the relation between the patient and the healthcare professional. Crucial in such a professional relationship is communicating about needs and goals. This is the common ground for every complex treatment plan and outcome-changing follow-up care. At the center are the goals that matter to the patient, but these must coincide with goals inherently developed by healthcare professionals.

The beauty of the Integrated Complex Case Management (ICM) concept is that it uses the Integrated Case Management-Complexity Assessment Grid (ICM-CAG) as a fundamentally versatile tool to improve and standardize the core process of communication between patients and their physicians, whether they are part of a hospital team, a primary care clinic-based team, or a network of health professionals and treatment facilities involved in the patient's care.

Patient-centered collaboration is what we are all trying to achieve. Unfortunately, from more than 30 years of clinical experience and research, it is far from easy to make patient-centered collaboration work in real life. The vast amount of information about concepts and evidence related to this topic expressed in this book, combined with the authors' personal experiences as clinicians, researchers, teachers, and consultants in healthcare innovation, could have saved me 10 years of struggling had I read it 30 years ago.

I am confident that many leading physicians who are struggling to better organize the delivery of care for the health system's most vulnerable and difficult patients in pediatric or adult practice will benefit immediately through the clear guidance, from theory to practice, described in the *Physician's Guide: Understanding and Working with Integrated Case Managers*.

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Preface

It is well established that healthcare spending in the United States is unsustainable. In the United States, we spend over 17 % of gross domestic product on healthcare, and many states are struggling to maintain adequate revenue for vital services such as public education due to encroaching healthcare spending. We also are well aware that the quality of the healthcare provided for these exorbitant costs is lacking. The United States ranks 27th in life expectancy among the 34 OECD countries, and health outcomes are particularly poor for minority populations and those with social disadvantage.

There have been many efforts to address issues related to the high cost and poor quality of the US healthcare system. Targeted interventions, such as use of generic medications, and preventive measures, like vaccines, have demonstrated cost savings while maintaining or improving quality. The emerging role of technology in healthcare holds promise for improvements in health with reductions in cost. Perhaps one of the most robust health system changes that may address the cost/quality chasm is aligning payment and clinical delivery systems while holding these systems accountable for health measures across the population. Such Accountable Care Organizations, or ACOs, may shift the focus of healthcare toward lower cost population-based interventions, as opposed to procedures and treatments that increase revenue for the medical system but offer little in terms of health improvement.

Those who are responsible for paying for healthcare recognize that individuals with a high burden of medical and psychiatric disease tend to engage with the medical system in a cost-ineffective manner. Adding in vulnerabilities such as poverty, homelessness, and limited education contributes to even higher medical spending and often related poor health. Our current healthcare system imposes significant complexities and barriers, such as limitations in health insurance coverage and logistical challenges in accessing needed treatments. Further, socially disadvantaged individuals with combined medical and psychiatric disease are often the ones who struggle the most to navigate such a complicated health system. To lower healthcare spending through improved health, there must be a comprehensive approach to addressing the needs of this vulnerable population.

Integrated case management (ICM) was developed by the INTERMED group in Europe and has been adapted for use within the US medical and payment systems. ICM provides a systematic method for identifying and addressing the needs of patients in multiple domains: biological, psychological, social, and health system related. Through ICM, case managers are educated to conduct comprehensive assessments with a combined focus on fact gathering and relationship building with patients.

Following this initial evaluation, the ICM tools facilitate the categorization and scoring of multi-domain vulnerabilities. From this distillation of the patient's biopsychosocial and health system profile, patient-centered and healthcare system-related goals are identified, and actions required to achieve these outcomes are described. Progress is monitored as case managers work with patients and clinicians to complete action items and achieve stated goals. ICM has the benefits of being easily interpreted and understood by practitioners and patients alike, providing use in both clinical and payment settings, and being available for adult and pediatric populations.

In this era of focus on population health outcomes and healthcare costs, physician leadership is vital. Physicians need to make clinical decisions that apply directly not only to the medical care they are providing but also to the upstream environmental and social factors affecting the health of the population they serve. Physicians must recognize that they are unable to tackle both of these initiatives without the support of other clinical and non-clinical staff, and physicians need to build health systems that embrace these concepts of interdisciplinary teamwork. Finally, physicians are in a prime position within the healthcare system and their broader communities to build relationships across agencies that support prevention and a path toward health.

This book was written to help physicians understand the importance of addressing the needs of patients who present with combined poor health and high healthcare-related costs, as well as the nature of working with others within and outside of the medical field to improve outcomes. The nuts and bolts of ICM will be described, as well as the concrete issues to consider when implementing an ICM program into a clinical and/or payment system. The rationale for how ICM contributes to value enhancement and methods for demonstrating its success are introduced. Ultimately, this book provides a guide to increasing the effectiveness of physicians working with case managers, both as leaders and as partners in clinical care.

As such, this book may be used to learn about concrete aspects that assist and support professionals delivering integrated case management and to imagine and foster the development of a healthcare system that works. A healthcare system where actions and outcomes are aligned to improve healthcare quality and the multiple areas that contribute to poor outcomes—both within and outside the healthcare system walls—are addressed in a proactive and comprehensive manner. In such a system, patients may become healthier with improved satisfaction in their medical care, thus reducing their need for costly interventions and lowering overall healthcare use. By realizing these individual changes person by person throughout a population, we may seamlessly correct our current unsustainable trajectory through substantial reductions in cost with simultaneous improvements in health.

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This work could not have been completed without the support and encouragement of the authors' families and work colleagues. Dr. Kathol especially wishes to thank his wife, Mary Kathol M.D., for her forbearance in putting up with his long hours in the office writing, compiling, and collating content included in the book. Further, he wishes to express appreciation for her professional feedback on content, direction, and organization. Her background in medical education led to the addition of many aides to understanding the message found in the book.

Dr. Kathol also wishes to acknowledge support provided by the Case Management Society of America (CMSA) and especially Cheri Lattimer, the organization's Executive Director, for assistance in reviewing materials and charting direction for case management as a whole as it takes its place in a reformed healthcare environment. Danielle Marshall, Chief Operating Officer for CMSA, provided innovation in the form of lexicon development for case management as a part of CMSA's e4 program. Through her work, and that of Task Force team members Kathleen Fraser, Mary McLaughlin-Davis, Nancy Skinner, Betsy Clark, Danielle Marshall, and Cheri Lattimer, it was possible to better clarify terminology that could be used to advise physicians in core concepts about patient "assist and support" services that is central to case management.

Dr. Joris Slaets, a geriatrician, wrote the Foreword. While he has been a major contributor to development and research related to the INTERMED in Europe, as well as his own particular brand of case management, especially in the elderly, he represents a large group of researchers in countries throughout the world, including Corine Latour, Frits Huyse, Fritz Stiefel, Peter De Jonge, Annette Boenink, Sylvia Ferrari, Wolfgang Soellner, Beate Wild, Aasta Heidal, Antonio Lobo, Elena Lobo, Yasuhiro Kishi, and others. Without the development of the INTERMED method for assessing multi-domain health complexity, the comprehensive assist and support program described in this book would not have been possible.

Dr. Kathol acknowledges the hard work of coauthors for *The Integrated Case Management Manual: Assisting Complex Patients Regain Physical and Mental Health*, Rebecca Perez and Janice Cohen. It was through the collaborative effort on this seminal publication that interest in and deployment of integrated case management (ICM) principles and practices has grown to the point that it became evident that there was a need for this Physician's Guide. Numerous locations and organizations throughout the world are coming to recognize the value that a systematized and comprehensive approach to case management can bring to patients. Only by sharing information about this addition to care with the clinicians treating patients with health complexity would it be possible to maximize the benefit their patients experience.

Finally, Dr. Kathol wishes to thank Suzanne Gatteau, coauthor on his first authored book, *Healing Body and Mind*, for helping him with his writing skills. While they are far from perfect, it is only with her formative linguistic tutoring that this book could have been completed.

Dr. Hobbs-Knutson would like to thank her personal and professional mentors for supporting her development. Dr. Brad Stein has provided unlimited encouragement, meaningful feedback, and experiences that have broadened her thoughts and academic aspirations. She is grateful for the opportunities that she has been afforded as a result of the mentoring relationship. Through the Kraft Center for Community Health, Dr. Derri Shtasel also provided a unique and innovative platform for her to understand the social determinants of health on a deeper level and meaningful ways that clinicians may intervene. On a personal level, Dr. Shtasel provided wisdom and insight that only a gifted physician, academician, and mother can contribute.

Dr. Dehnel would also like to thank the staff of CMSA for their support of the pediatric complex case management development, especially Cheri Lattimer, and for the organization's abiding support of this publication. The other members of the Pediatric ICM development team—Rebecca Perez, Sherry Wilson, Teri Treiger, Deborah Gutteridge, Dr. Steven Thurber, and Dr. William Meller—provided valuable insights into the world of case management and how to translate this important activity in terms that physicians can best apply to their roles. Dr. Read Sulik provided initial insights into complex pediatric behavioral health case management that benefitted concept development. Finally, and most importantly, Peter's wife Nancy has been a constant support in many ways throughout this project.

Contents

Part I

Overview of Case Management, Health Complexity, and the Integrated Case Management Approach

Chapter 1

Patient Health Care Assist and Support Services, Integrated Case Management, and Complexity Assessment Grids

> *"Remember teamwork begins by building trust. And the only way to do that is to overcome our need for invulnerability."*
>
> *—Patrick Lencioni*
> The Five Dysfunctions of a Team: A Leadership Fable

Chapter Objectives

- *To review health system changes that led to the development of specialty case management.*
- *To visit the life of a complex patient and the challenge for his treating practitioners.*
- *To describe the place of case management in the patient health care assist and support services continuum.*
- *To differentiate low, medium, high, and integrated high intensity assist and support services.*
- *To introduce integrated case management-complexity assessment grid (ICM-CAG) technology.*
- *To discuss integrated complex case management's potential contribution to the Triple Aim.*

The practice of medicine is much more complicated than in the day of the "old fashioned" house call. Providing respectful patient-centered care remains at the heart of clinician assessments and treatments. However, with the introduction of the Patient Protection and Affordable Care Act (ACA) [1], there is now also an expectation that physicians and other treating clinicians, e.g., clinical nurse specialists, physician assistants, non-physician behavioral health (BH) professionals, will optimize clinical outcomes and reduce costs in the populations of patients for whom they and their group are responsible. Thus, the face-to-face encounter is only one of several components of an increasingly complicated care delivery process. In addition to completing a patient evaluation and providing appropriate treatment, physicians are being asked to improve their communication and collaboration with others involved in the patient's care, to use health resources efficiently, and to do so in a way that maximizes and documents long-term clinical and functional improvement for the

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population as a whole, not just the individual patient [2, 3]. In the USA, often these goals are carried out through integrated clinician and health administrative networks, called Accountable Care Organizations (ACOs).

For 85 % of patients, delivering efficient, effective, and fiscally responsible care is not a problem. These individuals are mainly healthy and/or have acute or chronic illnesses that are responsive to treatment. They usually have good outcomes even when serious and costly disease is present. Appropriate clinical assessment and adherence to physician recommendations is all that is required. In this large segment of the population, perhaps the biggest challenge is to help patients stabilize and maintain their health by encouraging healthy behaviors. Prevention is a significant factor in long-term health stability, i.e., maximal control of existing conditions and prevention of new conditions or illness complications, and cost containment.

However, the 15 % of patients that use up to 80 % of health care resources [4, 5], many of whom are disabled, create the greatest challenge for physicians wishing to achieve the Triple Aim, i.e., improved care, improved outcomes, and lowered health-related cost [6]. While the Triple Aim is achieved on a patient-by-patient basis, associated population-based outcomes have gained in importance. Thus, as a greater proportion of complicated patients in this high-cost subset are efficiently and effectively treated, more value is brought to an "accountable" health system.

Most of the patients falling into this small group of high-need, high-cost patients have multimorbid medical and/or BH, which includes both mental health and substance use, disorders. These patients are confronted by a health system designed to cater to the uncomplicated 85 %. For instance, currently, most treating clinicians are paid on the basis of relative value units (RVUs), as part of fee-for-service contracts [7–10]. In this arrangement, as more patients are seen by a practitioner in a designated time period, the clinician and the clinic system are rewarded for higher productivity with increased total payment.

This simple component of the delivery system demonstrates a disconnect between the most common clinical payment procedure and the clinical needs of complicated high-cost patients. RVU-based care encourages less, not more, intensive physician involvement since a short duration of time with a patient is a marker for productivity. This has numerous consequences in both the practice of medicine and the ability of these patients to receive the care required to stabilize and maintain health.

- First, RVU-based, *time-limited* appointments compromise the ability to effectively assess and address problems in patients with complicated health needs. Case complexity billing adjustments do little to change this since often they do not alter physician compensation sufficiently to justify the significant amount of time required to understand and address patients' complex needs.
- Second, outcomes for such patients necessarily suffer when inadequate time precludes outcome-changing assessment and intervention. Thus, numerous ineffective outpatient appointments, which do not stabilize the patient, frequently result in inappropriate emergency room use, high numbers of tests and procedures, and more frequent, often preventable, inpatient admissions and readmissions.

- Third, and logically, clinicians and clinic systems take pains to avoid inclusion of these complicated patients in their population of accountability since they exceed RVU-based time constraints. These patients are associated with lower reimbursement for services delivered, persistent illness, a greater number of clinical encounters, and excessive cost. Further, their poor outcomes reflect badly on the physicians and network providing care.
- Fourth, payment for non-physician services is often minimal, if not absent, leading to physician care that is seriously under-supported by additional clinic-based resources, such as case managers.
- Finally, complicated patients are often shuttled from clinician to clinician even in the same clinic, such as resident physician clinics and rotating practitioner public program clinics. Since no single physician gains a full appreciation of the patient's many problems, patients receive acute problem-focused rather than comprehensive care. Such care delivery is associated with occasional focal positive clinical outcomes, but total health stabilization is not part of the physician–patient equation.

So far, the discussion has described delivery of clinical health services from the practitioner and health system perspective, i.e., factors that influence the ability to make the right diagnosis and provide the right treatment. What do patients falling into the 15 % with complicated health needs face when trying to get outcome-changing health care? This question can be addressed in many ways, but the most important has *nothing* to do with the physician specialty, the tests that are performed, the diagnoses that are made, or the treatments recommended. From the patient's perspective, the more pressing concerns are which providers they are allowed to see, where they can see them, and how they will pay for the care. These and other "nonclinical" barriers to improvement, such as no insurance coverage, limited transportation to appointments, poor coordination of care among their physicians, an unstable living situation, meager family support, and insufficient money to buy medications, are as, if not more, important than having a practitioner who makes a correct clinical diagnosis and prescribes an outcome changing treatment.

Physicians, nurses, and other clinicians in inpatient and outpatient settings are tasked with treating patients' illnesses, whether the health issues are medical or behavioral. If the correct diagnosis is made, then treatments most likely to reverse illness outcomes and complications can be delivered. To date, physicians and BH professionals, almost to a fault, target biomedical or psychological intervention as their primary, if not only, charge, often neglecting or overlooking nonclinical factors for which they do not see themselves as accountable. This predictably leads to poor clinical outcomes for the complex 15 % with nonclinical barriers to improvement that impede the success of appropriate and effective treatment recommendations.

Patient health care assist and support personnel are a burgeoning group of individuals with sufficient education, background, and/or specific training to help achieve desired health-related outcomes. They are tasked with aiding patients/clients, and especially those with health complexity, initiate and/or follow through on health improving activities [11]. An assortment of terms is currently in use to describe this

Table 1.1 Some common terms used for patient health care assist and support personnel

- Lay and professional health coaches
- Lay and professional patient navigators/assisters
- Lay and professional care and case coordinators
- Lay and professional care managers
- Lay and professional case managers
- Peer support personnel
- Disability and workers' compensation managers
- Lay and professional patient advocates
- Lay and professional discharge managers/transitions of care specialists

broad collection of personnel, a number of which can be found in Table 1.1. In fact, the terms are commonly used interchangeably yet describe a wide range of assist and support functions that, by their nature, will have variable impact on the individuals they assist. This creates confusion about what assist and support personnel do, what credentials are required for them to do it, which type of assist and support programs require more highly trained personnel to attain health and cost objectives, and what outcomes can be expected from the services provided.

Often assist and support personnel are health professionals, such as nurses or social workers, assigned to work with patients having one or more illness and/or a complicated health and social picture that makes it difficult to achieve health stability. They can also include individuals with limited training in medical fields and/or those who only have personal experience related to certain health conditions, i.e., peer support personnel. Unlike treating practitioners, *assist and support personnel do not diagnose or treat illness*. Rather, to varying degrees, they foster healthy behaviors through patient education; advocate for and assist patients in overcoming clinical and nonclinical barriers to improvement, including adhering to their clinicians' treatment recommendations; and follow patients, measuring and documenting outcomes in collaboration with the patients' physicians to assure that goals related to health are being achieved.

Perhaps the place where assist and support personnel differ most from treating practitioners, however, is that many do not limit themselves to the patient's clinical diagnoses and treatments, i.e., the "clinical" barriers to improvement. Several, such as will be seen later in discussion of integrated complex case managers [12], also assist patients with psychosocial and health system barriers. In a true sense, assist and support personnel are accountable for helping to change components of a person's life that reduce the likelihood that he/she will get better even when effective and appropriate treatment is being given. Physicians typically do not have time to include these extended health-enhancing activities in their already busy schedules, particularly in a fee-for-service payment environment.

The purpose of this *Physician's Guide* is to assist treating clinicians and physician overseers of assistance and support programs develop sufficient understanding of the assist and support process, especially the subcategory called integrated **complex** case management (ICM, technically I**C**CM), so they can most effectively utilize the skills of a new type of trained *helper* personnel, ICM managers, in achieving better clinical, functional, and cost outcomes for their patients. ICM systematically addresses multi-domain (biological, psychological, social, and health system) barriers to improvement in the most complex subset of patients and, as such, it represents a powerful aid to comprehensive care [12].

Complex Case Example: Bob

Bob will be the first in a series of complex patients whose clinical presentations will be summarized and then developed in this and following chapters. As you will see, health complexity, when conceptualized from the ICM multi-domain framework, creates challenges for treating practitioners. These challenges emanate from a variety of factors, only some of which relate to the physical or BH conditions experienced by patients. Not infrequently, however, the way that clinical services are delivered in the health system, the patient's social situation, financial issues, or even coping mechanisms (all involved in Bob's case) contribute to poor health outcomes. These nonclinical barriers to improvement are not typically considered areas of accountability by clinicians.

Bob, age 19, was one of the most expensive patients in his state public assistance program. He had been hospitalized over 20 times since age 14 for ingestions, insertions, lacerations, and injections of many articles and substances. On the latest admission, which was several months before, he had presented to the emergency room with a high fever, rigors, an unstable blood pressure, and a reddening knee. On admission, Bob said that he did not know what was causing the sudden deterioration in his health but that he felt terrible. The emergency paramedics transported him to a quaternary medical center since his current situation appeared more serious than those for which he had been treated by his rural hospital many times before.

Initially, Bob required treatment in the intensive care unit and he nearly died. He was treated for Gram-negative sepsis complicated by growth of a number of other "enteric" pathogens. In addition, he grew a strep species from his knee. It took weeks to stabilize his condition and the etiology was never uncovered. He steadfastly denied doing anything to himself and had no evidence of a compromised immune system. Whenever he was discharged to outpatient care, Bob was back in the emergency room within a day or two with a new fever or new area of induration. It was considered safer to keep him in the hospital where his behavior could be monitored.

Bob was well known to his regional medical system. Not only had he had similar "mysterious" medical presentations that led to the most recent hospitalization, he also had ingested a number of objects, such as batteries, broken glass, and pieces of ball point pins. On two occasions, it was necessary to remove items from his bladder, once a safety pin and once several pellet gun pellets.

Years previously, Bob had been seen by a psychiatrist during one of the hospitalizations for his factitious insertions (paper clip deep in urethra) and was diagnosed as having factitious and borderline personality disorders with antisocial traits.

After this initial evaluation, Bob refused to see mental health specialists. To him, his problems were "physical." He didn't need a "shrink." His last behavioral health assessment was 3 years earlier. Information from it was limited. Bob had been tested for recreational substances on numerous occasions but all screens had been negative for other than known prescribed medications. His medical doctors did not consider him for psychiatric admission since he had no psychotic illness and was not suicidal. Further, he was actually a pretty likeable person according to the hospital staff that worked with him.

Little was known about Bob's family life, schooling, work activity, or social situation. Short intake histories indicated that he lived with friends, had completed high school, and was not working. Outpatient follow-up for numerous medical problems were addressed by a local community health center. There was no steady primary care physician since Bob tended to be non-adherent, used the emergency room a lot, and kept getting sick and/or having complications. No one wanted him on his or her panel of patients. At this point, Bob's primary residence was the hospital, where he received magazine subscriptions in his daily mail. He had few visitors, none of whom were family.

Bob had been receiving treatment for many persistent and recurring problems from medical practitioners for the previous 5 years. Essentially, his treatment targeted acute exacerbations of documentable medical conditions. However, his presentations suggested that Bob had BH comorbidity that was contributing to his recurrent hospitalizations, yet Bob refused evaluation, let alone treatment, from BH professionals. Without significant change in the approach to Bob's care, it was likely that Bob would remain among the highest users of medical services in his state for years to come if he didn't die first.

The remainder of this chapter will describe the general practice of patient health care assistance and support and close with an introduction to integrated complex case management. Since treating clinicians are already hard pressed to complete their days in time for dinner, they should reflect on Bob as they read. How and which type of assistance and support might have helped Bob achieve a better long-term outcome than he had experienced for the last 5 years?

Patient Health Care Assistance and Support Terminology

Patient health care assistance and support is defined above and is often associated with use of a wide variety of interchangeable terms in the health care industry, some of which are listed in Table 1.1. For purposes of this *Physician's Guide, we have chosen to use "patient health care assistance and support" as an overarching description for general helper activities on behalf of individuals with health-related needs and "case management" to designate the subset of more intensive helper activities that is best provided by licensed or case management certified, trained health professionals.*

Constituencies within the patient assist and support community foster use of the term they favor. None, to date, has reached predominance, such that it has greater uniformity of meaning or industry support for its use. Additionally, new terms with specific presumed meaning continue to surface, such as "professional health coaching," though the description of these professionals' activities are congruent with those described by numerous other industry patient assist and support terms in common use.

Terms are chosen for a variety of reasons. For instance, "patient navigation" and "care coordination" are terms preferred to "care management" or "case management" by some since no patient wants to be "managed." "Management," on the other hand, is perhaps a better descriptor of personnel activity since assistance and support includes more than just finding the right practitioner or service location, which is implied by the term "navigation," or the coordination of care by treating practitioners, as is implied by "care coordination." Further, some prefer "care" to "case" management since it is a term that implies patient centeredness. Even "care management" does not capture the breadth of activities by assistance and support personnel, however, since many assist and support personnel address nonclinical, i.e., non-care-related, barriers to improvement as a part of their accountability.

Up to this point, we have been careful to use "personnel" rather than "professionals" to describe those who provide assistance and support. This is because there is as much confusion about the level of education, background, and training as there is about the terms used to describe assistance and support. Non-health professionals commonly perform such tasks as "lay health coaching" or "wellness counseling." These are characterized by performance of activities that encourage healthy behaviors, whether by distribution of educational materials on diet and exercise, participation in health fairs, or encouraging smoking cessation in largely healthy populations. This type of assistance and support does not require professional expertise to effectively complete tasks associated with it.

Other forms of patient assistance and support capitalize on the skills of licensed or case management certified health professionals who proactively assess and then assist those with health conditions, i.e., help "patients" with illnesses, in identifying and addressing areas in their lives that lead to illness development and/or persistence. Patient assistance and support in this context is intended to be an active force that fosters progress toward improved health related to existing conditions in those exposed to it. Helping patients navigate a complicated health system and facilitating coordination of care are clearly a part of this charge. However, these activities need to be supplemented by educated and experienced professionals who use their understanding of illness and the health system to support patients with treatment-resistant health problems. This need for educated and experienced health professionals is especially important for medium, high, and integrated high intensity assistance and support activities (covered below).

In the *Physician's Guide*, the term "case management" is used to describe the professional activities, including patient education, health facilitation, care coordination, patient navigation, promotion of "treat to target," and client/patient advocacy with the goals of reversing barriers to health improvement and stabilizing health. The professionals who provide medium- to integrated high intensity

Table 1.2 Case management Standards of Practice 2010

- Case managers with active licensure and up to date competence in their specialty area of practice should be able to perform the following case management support operations:
  - Patient/Client-Centered—collaborative
  - System-Centered—access and care coordination
  - Illness-Centered—chronic and multimorbid
  - Outcome-Centered—clinical, functional, satisfaction, quality of life, financial

Data from Case Management Society of America. *CMSA Standards of Practice for Case Management*. Little Rock: Case Management Society of America; 2010

Table 1.3 Components of the case management process

- Patient identification
- Case management assessment
- Care plan development
- Implementation of care plan activities
- Ongoing evaluation of goals and outcomes with escalation of care
- Patient graduation

Data from Powell SK, Tahan HA. CMSA Core Curriculum for Case Management, Philadelphia, Lippincott Williams & Wilkins, 2007

assistance and support are referred to as "case managers." These individuals are trained in the case management Standards of Practice (Table 1.2) and are able to perform core components of the case management process (Table 1.3) either independently or under the supervision of more experienced case managers. Most "lay" assist and support personnel do not have the level of health care sophistication needed to achieve meaningful outcomes for those with complicated and interacting health issues. Their backgrounds limit their ability to be trained to conduct comprehensive case management assessments, to build care plans from them, or to independently pursue corrective action plans.

Utilization Management

Patient health care assistance and support differs from "utilization management" (UM) in that it *helps individuals* with health-related needs, irrespective of benefits or coverage. UM, on the other hand, assesses whether an individual has insurance coverage for a medical or psychological service (including individualized patient assistance and support) and/or whether the individual has a medical or psychological condition, which would benefit from implementation of a clinical service if coverage exists, i.e., determination of medical necessity. UM is more correctly considered "benefit" management and not "assistance and support."

While UM decisions are often necessary in patients receiving assistance and support services, it is not an endorsed activity for assistance and support personnel. In many situations, combining the two roles creates conflicts between the helper activity of the assist and support personnel to the patient and the need to adjudicate a service, i.e., denial of a medical or psychological service for an individual without coverage when the service is needed for health improvement. This *Physician's Guide* will not discuss UM further, other than to recommend that organizational personnel independent of, but available to, assistance and support personnel perform the majority, if not all, benefit (utilization) management services.

A word of caution, however, is necessary since many health plans, care delivery systems, and management vendors also use the terms in Table 1.1 to describe personnel who are actually doing UM. For this reason, in today's health care vernacular, one cannot rely on the term used to describe assist and support personnel in health care settings. Rather, it is necessary to inquire about the specific role that these personnel play in their jobs, which will be discussed later in the chapter. A key factor that differentiates "assist and support personnel" from "utilization managers" is that the latter rarely work directly with patients but rather interface with hospitals and clinicians in the background to prevent inappropriate delivery of services that are not covered or are adjudicated as unnecessary. If direct patient contact occurs between the utilization manager and the patient, it is usually to report approval or denial of services.

Incidentally, competent utilization managers do not easily transition to assist and support personnel, and vice versa. The activities by these two specialists come from opposing conceptual frameworks and do not mix well together, i.e., utilization managers *approve or deny* care/*services* while assist and support personnel *help* patients overcome barriers to improvement. Utilization managers are adjudicators and assist and support personnel are problem solvers.

Assistance and Support Program Intensity

There are many ways in which health-related assistance and support can be divided. Some dimensions could include the population served; the health condition targeted; the desired outcome; the location of the client/patient; the assistance and support personnel caseload; the location of the service delivered; results accountability; the method of delivery, e.g., face-to-face versus telephonic; the education/background and training needs of the personnel providing assistance and support; and the duration of the assistance and support activity. The most helpful place to start, however, is subdividing assistance and support based on its level of intensity (Table 1.4).

Assistance and support intensity consolidates:

1. The complexity of the health issues for which help is being sought.
2. The level of expertise and proactive involvement needed by the assistance and support personnel.
3. The characteristics of the assistance and support process required for goals to be met.
4. Desired clinical, functional, cost, and other anticipated outcomes.

Table 1.4 Intensity-based health-related patient assistance and support

- Low assistance and support intensity (preventive health and health support)
  - Clients/patients—generally no/low but variable complexity and cost
  - Assistance and support personnel—little health-related education or experience needed; training required
  - Helper function—short-term, high caseloads, process-oriented goals
- Medium assistance and support intensity (general or targeted case management)
  - Patients with health conditions—medium but variable complexity and moderate cost
  - Case managers—health-related professionals or health care experience; training required
  - Management—short- to medium-term, medium to high caseloads, mix of process-oriented and measured-health outcomes
- High assistance and support intensity (complex case management)
  - Complex patients—high health complexity and cost (top 10–15 %)
  - Case managers—medical or BH nurse, social worker (case management certification desirable), or health professional with case management certification, training required
  - Management—medium- to long-term, medium to low caseloads, measured-health outcomes
- Integrated high assistance and support intensity (integrated case management)
  - Complex comorbid patients—biopsychosocial and health system barriers (top 2–8 %)
  - Case managers—ICM trained and experienced health professionals; cross-disciplinary service
  - Management—medium to long-term, low caseloads, measured-health outcomes

An intensity stratification helps treating clinicians conceptualize assistance and support activity as it moves from a clinical service enhancement, i.e., a better patient experience, to a contributor to the Triple Aim, i.e., also improved health and cost savings.

Low intensity assistance and support is typified by the delivery of help to clients or patients for hours to weeks by personnel that do not require health-related expertise in order to successfully complete the *process* of outcome-based assist and support activities. In *medium intensity assistance and support*, also called "case management," case managers require health-related education and experience in the health care industry, such as licensed health care professionals or those with certifications that allow independent full patient assessments. Without this background, they will possess limited ability to work with patients for which proactive, constructive, health-related assistance is essential if patients are to consistently show improvement in their health conditions. With medium intensity case management, helper activities, dispensed over days to months, are consistent with application of the case management Standards of Practice [11] and target mixed *process*- and *measured-health* outcomes.

High intensity assistance and support, also called complex case management, uniformly targets more complicated and high-cost patients who are found in any given population. *Complex case managers* come from a pool of nurses, social workers, or other licensed health care professionals able to implement the case management Standards of Practice [11] in patients with complex health conditions. Non-health care or peer support personnel generally cannot effectively deliver this level of case management but can work in collaboration with complex case managers to expand the percent of the population assisted. Complex case managers complete comprehensive assessments, develop care plans based on assessments, and provide assistance for months to years while attempting to achieve measured health outcomes that contribute to the Triple Aim [6].

Integrated high intensity assistance and support, also called integrated (complex) case management, is a form of complex case management in which experienced nurses, social workers, and other licensed or certified professionals with either medical or BH backgrounds receive specialized training in the delivery of multi-domain, i.e., biopsychosocial and health system, and cross-disciplinary, i.e., medical and BH, case management assessment and assistance. This form of management is designed to maximize value for the most complex medical or BH patients, especially those with concurrent medical *and* BH conditions. It can be used equally well, however, in patients with less health complexity and in those with medical only, BH only, or combined medical and BH disease.

Examples of common forms of assistance and support activities described in the published literature that are generally categorized as low, medium, high, or integrated high intensity can be found in Table 1.5. For each of these categories, however, there is considerable confusion about the manager expertise that is needed, the optimal duration of intervention, the core activities provided, and what constitutes value-based outcomes. In fact, many assistance and support personnel reviewing Table 1.5 may take exception to where their particular named brand of assistance and support has been placed in the list.

For instance, disease management, considered medium intensity assistance and support, describes the process by which case managers assist patients with a certain medical condition, such as diabetes or depression. While these managers work with

Table 1.5 Examples of intensity-based health-related assistance and support programs

- Variable
  - Health plan management, adult and pediatric inpatient and outpatient management, accountable care organization (ACO) management, government and military program management
- Low intensity assistance and support programs
  - Health care coaching, also called wellness counseling; employee assistance counseling; discharge management; peer support; lay patient navigation; lay care coordination; lay in-home caregiving
- Medium intensity assistance and support programs
  - General case management, medium tier county/state program management, high need disability and workers' compensation management, disease management, elderly and disabled nursing home management, palliative care management
- High intensity assistance and support programs
  - Comprehensive medical case management, Assertive Community Treatment (ACT) team management, intensive case management
- Integrated high intensity assistance and support programs
  - Adult and pediatric integrated case management

patients having a specific disorder, the actual assistance by the manager for the patient could range from short-term isolated tasks, e.g., providing educational materials, approving services, or medical devices, assuring discharge continuity, or finding a specialist (all low intensity assistance and support or utilization management activities); to medium-term targeted assistance, e.g., coordinating communication among clinicians and clinic systems, facilitating rapid recovery and return to work (consistent with medium intensity disability or workers' compensation management); to medium- to long-term assistance in overcoming barriers to improvement, e.g., helping to find affordable insurance products, resolving trust issues with physicians, measuring outcomes, and helping to pursue next steps in care (consistent with high intensity case management).

In order to provide a framework for treating clinicians in this chapter, we have consolidated named categories of assistance and support programs (examples seen in Table 1.5) into low, medium, high, and integrated high intensity programs and defined general characteristics of each (Table 1.6). While it takes time to go through Table 1.6, it is well worth doing. Each level is delineated by the population served; the triage process; assistance personnel backgrounds, training, and activities; and caseload expectation and intensity of contact. From these, it is possible to project program outcome accountability and expectations. The Table allows readers of the *Physician's Guide* to translate where their own local program or one described in the literature fits into the intensity grid, regardless of the name applied to the program, and to anticipate, based on its intensity characteristics the expected clinical and cost outcomes.

Assistance and Support Personnel Competency Levels

Column four in Table 1.6 describes educational, experience, and training characteristics of personnel most likely to be able to perform assist and support activities at each level of program intensity. The Assist and Support Personnel Competency Map (Table 1.7) further elucidates the background and skills needed to perform at various levels of program intensity. While senior case management specialists (Level 4C) who are qualified to perform higher intensity activities can equally well perform low-level intensity activities (and often do, including utilization management), the reverse is not true. Health support personnel (Level 1C), who are not health professionals and often have minimal understanding of illness and the health system, do not have the backgrounds needed to perform more than the most basic assist and support tasks without supervision. On the other hand, those at Level 1C who are successfully trained in the case management assistant role can be of great value when working on a team also composed of those with Level 2C through 4C competencies. Under supervision, Level 1C case management assistants can expand the reach of case management programs of all intensity levels while conserving resources.

Table 1.6 Intensity-based assistance and support general program characteristics

Assistance and support intensity level	Population served	Patient triggering	Personnel education, experience, and training	Personnel activities	Typical caseload; annual cases	Assistance duration; intensity of contact	Content; outcome accountability	Cost outcome expectation
Integrated high intensity (Integrated [Complex] Case Management [ICM])	Chronic medical *and/or* behavioral illness out of control; very high cost	Systematic identification of high risk, high cost chronic medical *and/or* behavioral adults and children	Experienced licensed health professional able to implement ICM practices (usually case management certified); training in ICM	Biopsychosocial and health system assessment, care plan development and implementation, records measured health outcomes, graduation	20–50; one to two hundred	Months to years; heavy to medium interaction across medical *and* behavioral service settings	Biopsychosocial and health system; measured total health and cost improvement	Direct and indirect; predicable ROI is medium to high and measured in months to years
High intensity (Complex Case Management)	Chronic medical *or* behavioral illness out of control; high cost	Systematic identification of high risk, high cost chronic medical *or* behavioral patients	Experienced licensed health professional able to implement case management Standards of Practice (usually case management certified); training in local work processes	Targeted medical *or* behavioral comprehensive assessment, care plan development and implementation, variable outcome measurement, graduation	Less than 75; hundreds	Months to years; heavy to medium interaction across medical *or* behavioral service settings	Medical *or* behavioral; case management process completion (occasional measured-health improvement)	Direct and indirect; likely ROI is medium and measured in months to years
Medium intensity (Case Management)	At-risk patients with illnesses; low to medium cost	Sometimes triage of population for chronic illness or health risk	Licensed health professional with understanding of case management Standards of Practice; training in local work processes	Process algorithm completion with use of medical knowledge and experience, process outcomes measured	Less than 200; hundreds to a thousand	Weeks to months; medium to light interaction across service setting	Medical *or* behavioral; process algorithm completion (occasional measured-health improvement)	Direct and/or indirect; ROI, if present, is low and measured years later
Low intensity	Generally healthy but "at risk;" low cost	Defined population without triage	High school education or above and no experience necessary; algorithm training required for effectiveness	Process algorithm completion	Variable; hundreds to thousands	Hours to weeks; light interaction in specified service location	Medical *or* behavioral; process algorithm completion	Variable but, if present, ROI is low and generally measured years to decades later

Table 1.7 Assist and support personnel competency map

Assistance and support competency level	**Education**	**Experience**	**Training**	**Assist and support activities**	**Role examples**
Level 4C: case management senior (specialist clinician)	Licensed health care professional; case management certification	One or more years working at Level 3C; demonstrated leadership skills	Staff/program supervision; skills in educating staff about case management; integrated case management	Independent application of longitudinal complex case management; team leader; trains Level 2C and 3C managers	Integrated case manager; care coordination supervisor of Level 1C to 3C managers; management educator
Level 3C: case management mid career (mature clinician)	Licensed health care professional; often case management certification	One or more years working at Level 2C; management of complex patients	Training in case management allowing judgments and decisions on care plan direction and execution; staff supervision	Able to apply the case management Standards of Practice (Table 1.3) in complex patients; supervises Level 1C and 2C managers	Complex case manager; case management supervisor
Level 2C: case management entry (novice clinician)	Licensed health care professional; training in core case management work processes	Initial use of core case management work processes (see Table 1.2)	Training in protocols, procedures, or workflows associated with assist activities and application of case management principles	Can apply care plan protocols, procedures, and workflows under supervision; works with Level 1C personnel	Clinician-based care coordination; complicated care transitions; workers' compensation
Level 1C: health support personnel	Secondary school or above	Appreciation of the need for health and healthy behaviors	Basic training in protocols, procedures, or workflows associated with assist activities	Clinical, technical, or administrative duties using protocols, procedures, or workflows with patients/clients	*Unsupervised*: health coach; family caregiving; lay navigation *Supervised*: care coordination; peer support; case manager assistant

Table 1.8 Descriptions of several types of low intensity assist and support programs

- *Health care coaching, wellness counseling*—assist clients understand (and implement) habits of healthy behavior who are at risk for development of health conditions or complications from existing conditions (Level 1C)
- *Employee assistance programs*—help employees address workplace, family, financial, and health issues to maximize health, well-being, and workplace productivity (supervised Level 1C and 2C)
- *Discharge management (transitions of care)*—confirm medication reconciliation, timely outpatient clinician appointments, and filled prescriptions for recently discharged hospital inpatients (supervised Level 1C and 2C)
- *Lay in-home caregiving*—assist patients with home health needs as an alternative to a skilled nursing facility (Level 1C or 2C depending on need)
- *Lay navigation*—assist a target population find and access needed services (supervised Level 1C and 2C)
- *Lay care coordination*—assist a target population coordinate provider and system services (supervised Level 1C and 2C)

Levels 2C through 4C are composed of health professionals with increasing amounts of education, experience, and training. Those with higher competency play increasingly important roles in programs of higher intensity. Not listed in Table 1.7 are Levels 5C (those with the skills needed to assume program managerial positions) and Level 6C (those with educational, experiential, and leadership skills which allow them to assume executive positions in the health care industry).

Low Intensity Assistance and Support Programs

Level 1C and 2C personnel can provide assist and support programs that fall into the low intensity category (Table 1.8). These programs require practitioners with little background or experience in the health care field but with a general appreciation for the importance of health maintenance and behavior. Level 1C personnel can have as little as a high school education and no previous health-related training or employment experience. For instance, peer support personnel include those who have or have previously experienced a chronic health condition, such as substance dependence, human immunodeficiency virus (HIV) infection, kidney disease, or asthma. Level 1C personnel and 2C professionals always require training in the type of assist and support activities they will be performing, and they often need Level 3C or 4C case manager supervision to understand how to contribute to improved health and function and to cost reduction. Only then can they effectively work toward the measureable goals of the assist and support activity.

Level 1C personnel activities often include work with populations of individuals, some with an underlying illness but some without. For instance, health care coaches target at risk subsets of otherwise healthy populations (*clients, not patients*) to help them adopt a healthy lifestyle. This is a common benefit provided by health conscious employers. In this capacity, it is often possible to train these individuals to perform unsupervised assistance activities.

Of course, some Level 1C personnel and Level 2C professionals routinely work with those having illness, such as in discharge management programs that use work process algorithms. These programs help patients transition from inpatient to outpatient settings by assuring that patients understand their discharge medications, fill their prescriptions, and see their outpatient care provider who has received information about their hospitalization. By doing so, these assist and support personnel promote and speed return to health, mitigate adverse transition events, and decrease the potential for hospital readmission. Supervision by Level 3C or 4C professionals is generally advisable since an understanding of medications is needed and unforeseen circumstances often arise. Primarily, however, assist and support personnel need only to know the mechanics of best practices in this area of targeted assistance [13].

Medium Intensity Assist and Support (Case Management) Programs

Medium intensity assist and support (Table 1.9), hereafter called general or targeted "case management," programs, require assistance and support by "case managers," i.e., those with a greater appreciation of common illnesses and medications and the system in which medical and/or behavioral treatment is provided. These managers can perform at Levels 2C through 4C (Table 1.7). Base knowledge for case managers comes through education in a health profession and health-related employment and/or through a certification program that includes independent assessments. In all cases, it is accompanied by specialized training in the principles (Table 1.2) and practice (Table 1.3) of case management. In today's world, case management is generally an added qualification in nursing and social work. Other licensed health professionals, however, can pursue additional training and certification in it as well.

Assisted *patients* in case management programs typically have one or more chronic medical or BH condition and have as much difficulty accessing the right care as they do in getting the right diagnosis and treatment. Thus, only case managers

Table 1.9 Descriptions of several types of medium intensity assist and support programs

- *Medical case management*—assess and assist patients with low to medium levels of medical health need connect to clinicians and receive outcome changing services in the care delivery system and from the community (Level 2C, 3C, and 4C with Level 1C assistants)
- *Disability management; workers' compensation*—insure that employees with work-impacting injuries or illnesses receive the health care support they need while on benefits (Level 2C, 3C, and 4C with Level 1C assistants)
- *Behavioral case management*—assess and assist patients with low to medium levels of behavioral health need connect to clinicians and receive outcome changing services in the care delivery system and from the community (Level 2C, 3C, and 4C with Level 1C assistants)
- *Disease management*—assist patients in receiving the best care for specific illnesses, e.g., diabetes, depression, asthma (Level 2C, 3C, and 4C with Level 1C assistants)

with a basic understanding of common medical or behavioral conditions and the challenges that patients face in accessing and receiving needed clinical attention, i.e., competency Level 2C and above, are likely to achieve health and cost outcomes in medium intensity programs. This is one feature that differentiates the capabilities of case managers from those able to function in a number of low intensity assist and support programs. It also distinguishes them from concerned relatives or friends who attempt to provide a similar type of assistance but without the benefit of what can best be described as "medical savvy."

Medical savvy is a tangible, intangible that, for example, allows medium intensity case managers to understand:

- When patients are not adhering because they don't understand the recommended treatment.
- When the emergency room could be replaced as the primary source of care due to the presence of local primary care physicians with urgent care clinic capabilities and the potential for care continuity.
- When noncommunication among the patient's practitioners is leading to conflicting messages concerning the patient's care and ultimately clinical nonresponse.
- When finding the patient housing may be a more important first step in controlling illness than helping the patient fill a prescription.

Medical savvy does not mean that the case manager, whether at Level 2C, 3C, or 4C, has an in-depth understanding of each illness or its treatment. Nor does it mean that the case manager has an understanding about all the community resources that could be used to augment outcomes for a given patient. It does, however, mean that the case manager has enough understanding of illness and the delivery system to know how to creatively find and use the answers when barriers to improvement are occurring. The case manager employs her or his informed understanding and motivational interviewing skills to engage patients in change behaviors that promote progression to better health.

As illustrated in Table 1.9, there are many general and targeted case management subgroups. While the case managers themselves have educational backgrounds and/or experiences allowing them to augment patient outcomes, they also require training, regardless of their level of competency, in the specific subtype of management in which they are involved. For instance, middle tier state or county program managers, who work with patients with medium to highly complicated conditions in public health settings, would target skill development in understanding access and treatment locations that accept Medicare, Medicaid, and public assistance insurance; publically funded assistance programs; community resources; wrap-around services; and others supporting those in state and county programs. Ideally, these case managers would assess and then assist patients in getting the care that they need. Not only would they connect patients to needed clinicians, they would also know how to help patients find treatment resources, uncover monetary support programs (such as for drugs at reduced costs), and promote follow through on their treating clinician's recommendations.

On the other hand, high need workers' compensation managers, another type of targeted medium intensity case manager, focus on services for work-related injuries in employees. The majority with work-related injuries do not require case management assist services. Those with complicated recoveries, e.g., those who are not improving at an anticipated rate or for whom there is concern about fraud, however, may need a case manager to help ensure that health care support and treatment leads efficiently to return to work. Thus, high need workers' compensation managers must understand not only basics of common job-related injuries and the health system, but also details related to payment for workers' compensation injuries, the availability of employee assistance benefits, workers' compensation state and federal regulatory rules, the art of attending workers' compensation clinic visits, and back-to-work options for employees reentering the workforce. This all requires customized training tailored to the specific role of the case manager.

There are many other locations and populations in which case management is delivered, such as in nursing homes; in primary care, specialty medicine, and specialty BH clinics; in specialty medical and behavioral inpatient units; on military bases; and at veteran hospitals. While this list is not exhaustive, it illustrates locations and populations that benefit from managers who are certified in case management or are licensed in health-related professions, e.g., occupational therapy, physical therapy, psychology, social service, pharmacy, and nursing, and have training customized to the population they serve. Importantly, case managers know how to productively use their core understanding of health and care, the medical literature, medical colleagues, community resources, and their organizational support system to assist patients in moving steadily and predictably toward improved health and function. These are core components of case management education during the credentialing process.

While case managers are often driven by process outcomes, in the future, they will be increasingly expected to utilize their medical/clinical backgrounds and expertise to achieve actual clinical and functional (*measured health*) outcomes. For instance, disease managers will be graded on their ability to help stabilize chronic medical conditions and decrease illness complications. Workers' compensation managers will be considered successful when they speed employee recovery and return to work. The number of disease manager-based calls or workers' compensation assessments, both process measures, may be steps to accomplish measured health outcomes but, in themselves, do not provide evidence that health outcomes improve. Thus, measurement of health and cost outcomes will increasingly be incorporated into productivity reports to ensure that actual value is brought to patients, to clinicians, and to the health system.

High Intensity Assist and Support (Complex Case Management) Programs

High intensity assistance and support, hereafter-called *complex case management*, is differentiated from lower intensity programs in that it specifically targets patients with complicated, high cost, and multimorbid health problems (Table 1.10), i.e., those with high health complexity (more on this in Chapter 2). Low- and

Table 1.10 Description of several types of complex case management programs

- *Comprehensive case management*—assistance to patients with one or more catastrophic medical conditions (high biological complexity) in the coordination of medical services and rehabilitation to stabilize health and maximize function (medical Level 3C and 4C with 1C and 2C assistants)
- *Assertive Community Treatment (ACT) team and intensive case management*—assistance to patients with chronic serious mental health and substance use disorders (medium to high psychological complexity) control illness and improve function in the community setting (BH Level 3C and 4C with 1C and 2C assistants)
- *Traditional integrated case management*—longitudinal assistance to complex medical or BH patients in reversal of primary disciplinary barriers to improvement so that there is primary discipline illness stabilization and improved function coupled with referral to cross-disciplinary case manager assistance for assessment and assistance with comorbid condition (medical or BH Level 3C and 4C with 1C and 2C assistants with referral to cross-disciplinary assist and support personnel with unknown qualifications and work processes)

medium-intensity assist and support programs may occasionally have complex patients, but mainly service the needs of patients showing less acuity and complicating factors, having fewer comorbidities, or those who are at risk for but have not developed health complexity. For example, discharge management, a low-intensity program, is characterized by algorithmic assistance to *all* patients discharged from the hospital. While all have had a condition for which inpatient services were required, it does not necessarily mean that they are complicated at discharge. For instance, most patients who have had hip surgery experience uncomplicated convalescence and recovery. They, like many discharged patients, fall into the noncomplex category yet all are included in most discharge management programs. Only a small subset of patients has complicated post-hospitalization needs, and even for these patients, the focus is on the process of securing ongoing care and treatment during the transition after hospitalization. While these processes may support long-term health, the measured outcome usually is not clinical and functional improvement per se. Discharge management cannot be said to target complex patients, but rather post-acute patients.

In contrast, correctly configured, *complex* case management that targets patients at discharge would task case managers with the responsibility of improving outcomes through assistance and support *only* for complicated, high-cost discharged patients. These patients have many barriers to improvement and are at high risk for negative post-discharge outcomes. Furthermore, the work processes that complex case managers would use would likely be much more extensive than those associated with mere transition from one to another level of care. To varying degrees, they would assist these complex patients control the ravages of their underlying illness as well as the effects that uncontrolled and persistent illness has had on their personal, social, and economic lives, such as job loss, limited or no insurance, an unstable living situation, or poor social support.

Logically, since patients in complex case management programs have more intense manifestations of illness and illness consequences, complex case managers would be expected to have greater success if they were more highly educated in a clinical discipline, had experience with sick patients in a complicated health system, and were more versed in the implementation of the case management Standards of Practice specifically in patients with health complexity. Case managers falling into competency Levels 3C and 4C fit this bill. Complex case managers would be called upon to utilize their understanding of illness and the health system to solve problems that less qualified assist and support personnel cannot.

While Level 3C and 4C case managers are at the top of the discipline-specific case management pyramid, they are limited in number and an extremely valuable resource. Many programs have found that the work of complex case managers can be expanded if less well-trained/qualified personnel with an understanding of complex case management assist and support work processes, such as Level 2C case managers or Level 1C personnel, act as case manager assistants. While they cannot complete comprehensive assessments or develop detailed plans of care performed by complex case managers, they can facilitate completion of clinical, technical, and administrative action items needed to achieve complex patient goals. This is an important consideration when deploying complex case management programs and is more fully described in Chapter 8.

Integrated Medical and BH High Intensity Assistance and Support Programs (Integrated Adult and Pediatric [Complex] Case Management)

Ostensibly, traditional case management does not make a distinction between the assist activities for medical and BH patients; however, a review of published literature and case management training programs shows that most case management programs focus on either patients with medical or BH conditions [12]. For instance, literature on complex case managers suggests that they either address the medical needs of patients, e.g., comprehensive medical case management, or the BH needs of patients, e.g., Assertive Community Treatment and intensive case management, but not both. When concurrent cross-disciplinary conditions are present in either setting, which is the case for 60–80 % of those with complex health situations, and there is a desire to address cross-disciplinary needs, then patients in traditional complex case management settings are referred to cross-disciplinary case management personnel as the primary and often the only assistance activity (Table 1.10). This is what we term “traditional integrated case management.”

Communication between medical and BH case managers for such patients is typically sparse if it occurs at all. Patients are referred with the presumption that cross-disciplinary assistance will be given that has little to do with case management assistance and support for the primary discipline’s needs. Data on patients with concurrent medical and BH issues belies this presumption as medical and BH conditions are often intertwined and act synergistically to promote poor health outcomes (covered in greater detail in Chapter 2). Thus, there is a need for an integrated approach to medical and BH case management in the majority of patients with health complexity.

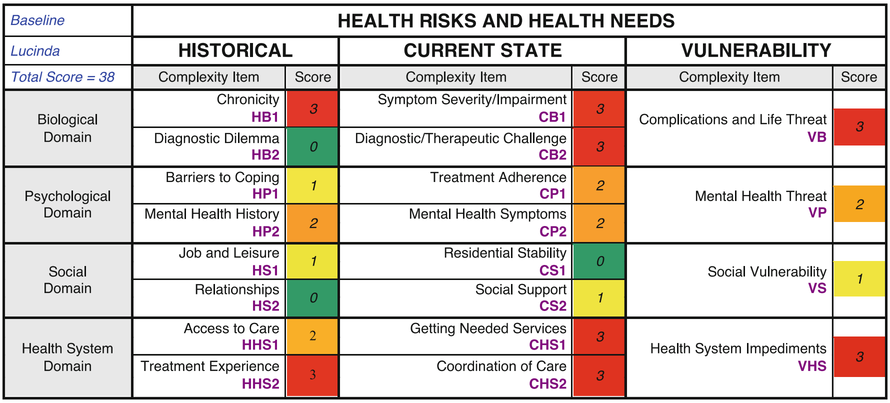
It is for comorbid complex patients that adult and pediatric ICM was developed. ICM has all of the requirements that complex case management does, i.e., delivered by mature licensed or case management certified health professionals, such as nurses and social workers, with training in the case management Standards of Practice. Case management services are provided to high-need, high-cost patients during a longitudinal course of assistance. Like many complex traditional case management programs, ICM targets measured health outcomes as a primary goal and involves intensive work with patients until health has stabilized or maximum benefit has been achieved.

ICM, however, differs from complex case management in several important ways (Table 1.11). First, it is built on a complexity, rather than a disease, platform. This allows ICM managers to assist in the care of patients regardless of their underlying illness. Second, it considers the relationship between the patient and the case manager as a primary factor in achieving the changes desired to stabilize health. Therefore, a focus on relationship-building and trust between the ICM manager and the patient is woven throughout the care process, beginning with the comprehensive assessment, which uses a semi-scripted dialogue between the patient and the ICM manager. It is designed to support relationship development while data gathering occurs. Third, ICM targets clinical and nonclinical barriers to improvement in the

Table 1.11 Traditional versus integrated case management

Traditional	Integrated
• Illness-focused	• Complexity-focused
• Problem-based	• Relationship-based
• Diverse triggering methods	• Complexity-based triggering
• Case managers trained in general medical or BH case management	• Case managers trained in bio-psycho-social and health system data entry
• Pediatric case management based on child/youth manager experience	• Systematic pediatric complexity-based case management capability
• Mental health management support requires manager handoffs	• Cross-disciplinary management support without manager handoffs
• Illness targeted patient assessments, goals, and actions	• Goals and actions linked to multi-domain assessments
• Process orientation and measurement—cases touched, calls made	• Health outcome orientation and measurement—clinical, functional, fiscal, satisfaction, quality of life
• Manager caseload dictated by case triggers and process targets	• Manager caseload dictated by level of complexity and outcome expectation

Table 1.12 Integrated case management-complexity assessment grid (ICM-CAG scored example)



Baseline	HEALTH RISKS AND HEALTH NEEDS					
Lucinda	**HISTORICAL**		**CURRENT STATE**		**VULNERABILITY**	
Total Score = 38	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity **HB1**	3	Symptom Severity/Impairment **CB1**	3	Complications and Life Threat **VB**	3
	Diagnostic Dilemma **HB2**	0	Diagnostic/Therapeutic Challenge **CB2**	3		
Psychological Domain	Barriers to Coping **HP1**	1	Treatment Adherence **CP1**	2	Mental Health Threat **VP**	2
	Mental Health History **HP2**	2	Mental Health Symptoms **CP2**	2		
Social Domain	Job and Leisure **HS1**	1	Residential Stability **CS1**	0	Social Vulnerability **VS**	1
	Relationships **HS2**	0	Social Support **CS2**	1		
Health System Domain	Access to Care **HHS1**	2	Getting Needed Services **CHS1**	3	Health System Impediments **VHS**	3
	Treatment Experience **HHS2**	3	Coordination of Care **CHS2**	3		

assessment and care assistance process. Using a multi-domain, i.e., biopsychosocial and health system, complexity assessment approach, information about clinical and nonclinical factors impeding return to health is systematically gathered and becomes a part of the assistance process. In many situations, nonclinical factor correction takes precedence over clinical factors.

Fourth, ICM managers address both medical and BH needs without handing the patient to another case management professional. Since case managers do not treat patients but merely assist them in getting the treatment they need, patients can have primary medical conditions alone, primary BH conditions alone, or co-occurring medical and BH disorders and benefit from ICM. ICM training is needed to help managers learn to address both types of conditions but does not require a background in either medical or BH service delivery per se.

Fifth, measured health outcomes are core to the ICM process. Thus, ICM managers collaborate directly with their patients to create a prioritized plan of care that contains patient-centered goals and actions. They then work together to achieve directly measured management goals as well as global clinical, functional, quality of life, satisfaction, and cost outcomes. As barriers to improvement are reversed and health is stabilized, then "graduation" from ICM becomes possible.

Finally, ICM has built-in features that many other forms of case management do not have. It uses a color-coded complexity grid to simplify identification of prioritized care plan items (Table 1.12). It includes both adult and pediatric ICM assessment and intervention capabilities. It has the potential to be used as a caseload estimator since the complexity grid provides a numeric complexity score for each patient. It uses ICM tools specifically designed to document and follow complexity issues over time. Lastly, the ICM tools incorporate a method for determining when it is appropriate to start planning for case closure. All of these features will be described in detail in Chapter 6.

Integrated Complex Case Management's Potential Contribution to the Triple Aim

Treating clinicians should now have a basic understanding of the distinctions among low intensity assistance and support, case management, complex case management, and integrated complex case management. During the remainder of the *Physician's Guide*, the authors will specifically target a full appreciation for the value that integrated complex case management brings to patients, their providers, and the health system. The intent of this focused attention is not to suggest that lower intensity forms of case management, including low intensity assistance and support, are not important and cannot potentially bring value to patients and the health system. A number have been demonstrated to do so. Rather, we have chosen to prepare the *Physician's Guide* so that treating practitioners understand how to work with an increasingly important contributor to measured health outcomes and cost reduction, i.e., ICM managers.

With the introduction of provisions in the ACA, value derived from integrated complex case management services is projected to transition from primarily health plans and government agencies to networks of physicians setting up ACOs [2, 3, 14, 15]. While there remains great variability in what ACOs actually look like or even in what they are sometimes called, their intent, as outlined in the ACA, is to tap into the expertise of networks of clinicians caring for patients to develop systems of care that improve clinical outcomes at lower total health cost for the population served. ACOs will enter contracts with payers in which they take global risk for outcomes in populations of patients. To the extent that they can decrease total cost of care for the population while maintaining quality and health outcomes, they will benefit from the savings achieved.

Unlike "capitated" contracts in the past, however, the ACOs can reorganize the way that they pay for services from contributing practitioners, such as paying BH providers as part of their medical network. This has already begun as a part of Medicare Shared Savings Programs (MSSP) but is also increasingly becoming part of commercial contracts for nonpublic program populations. Further, with the introduction of health care Exchanges, care delivery systems will find themselves entering global risk contracting for high-risk populations for which profitability can only occur when efficient and effective clinical delivery procedures are used [16]. Health care contracting is projected to move increasingly from fee for service to global risk over the next 5–10 years.

ICM has the potential to play a major role in this ultimate agenda but only if the practitioners treating patients understand how these managers can help and how best to tap into the service support that they deliver. We will try to unfold this as the reader progresses through the *Physician's Guide*.

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Chapter 2
Health Complexity and the Interaction Between Physical and Behavioral Health Conditions in Adults

> *"If you're not confused, you're not paying attention."*
>
> *—Tom Peters*
> Thriving on Chaos: Handbook for a Management Revolution

Chapter Objectives

- *To define "health complexity" and its importance in integrated complex case management for adults.*
- *To describe the effects of the interaction of physical and comorbid behavioral health conditions on health and cost outcomes in adults with health complexity.*
- *To discuss the fragmentation of physical and behavioral health assessment and treatment due to independent payment practices.*
- *To summarize the potential for value through multi-domain physical and behavioral health integrated case management in adults with health complexity.*

The first chapter of the *Physician's Guide* goes into great detail about patient health care assistance and support programs and their case management subcategories, which requires the skills of licensed professionals with case manager competencies that match increasing levels of assist and support program intensity. Since assistance and support programs and the published literature are generally indiscriminant in their use of terminology (see Table 1.1) to describe assistance and support interventions regardless of program intensity or the personnel competencies of those providing services, we will rely on the concepts of program intensity and assist and support personnel competency used in Chapter 1 throughout this book. "Case management" will remain the term that demarcates programs with higher intensity and "case managers" the professionals needed to meet program and patient needs.

Again, it is not the intention of this *Guide* to devalue low intensity assistance and support programs since several with rigorously followed work process algorithms have the potential to improve the patient experience, enhance clinical outcomes, and reduce the total cost of care. Low intensity assistance and support, however, focuses on discrete issues for clients and patients, such as fostering healthy behaviors, improving transitions from one level of care to another, or efficiently supporting the

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needs of patients confined by health or age to their home environment. For patients with persistent, expensive, and treatment resistant chronic conditions, low- and many medium-intensity assistance and support programs do not foster total health improvement and stabilization. Since this is a major area of opportunity for improving health outcomes and lowering cost, it is where emphasis lies in this book.

Before we get into the work processes that are used by complex case managers, and particularly integrated complex case managers, it is important for physicians to have an understanding of what is meant by "health complexity" in the context of the *Physician's Guide*. Further, we live in a health care environment in which medical and BH services are segregated. There is increasing awareness that separation of the two has been destructive for patients, both clinically and economically, but few recognize the extent to which medical and BH comorbidity affect total health outcomes and the cost of care. In this chapter, we will delineate the specific meaning assigned to health complexity and summarize how the interaction of medical and BH conditions affects "standard" clinical care as it is currently practiced.

Bob, briefly described in Chapter 1, is a good example of a patient with health complexity who for 5 years has been treated with a target on his biomedical presentations in a system that, by financial and clinical fiat, negated the possibility of coordinating medical and BH services. As a result, the underlying reason for his multiple medical admissions, i.e., his factitious disorder related to presumed borderline personality disorder with antisocial traits, is never addressed. In fact, Bob is unlikely to receive needed attention for this component of his clinical presentation and other factors for the next 5 years unless a multi-domain approach (biopsychosocial and health system) is included as a part of his plan of care. This is where integrated complex case managers working in concert with Bob's clinicians come into the picture. As a team, they have the potential to augment Bob's total health outcomes, not only by addressing his crisis-related medical problems, but also by assuring that the behavioral comorbidities and social and health system issues that complicate health stabilization are addressed.

Health Complexity

The majority of the medical literature defines health complexity by the age of the patient; the number of chronic illnesses the patient has, with an emphasis on physical disease; and the costs of incurred services [1–4]. While these are clearly components of complexity, including for those with primary BH disorders, they do not take into account the many other factors that create obstacles for patients and clinicians in achieving health improvement. For instance, personal and social factors, such as housing, ethnicity, social support, and financial situations, as well as psychological conditions, are also significant factors in the concept of complexity [5, 6]. With the exception of the INTERMED group, based in Europe [6], and the early work of the Agency for Health Research and Quality (AHRQ) Multiple Chronic Condition Research Network (MCCRN) [7], we are unaware of other groups that have specifically included health system factors as contributing to poor outcomes in complex patients.

For purposes of the *Physician's Guide*, "health complexity" will be defined as *interference with the achievement of expected or desired health and cost outcomes due to the interaction of biological, psychological, social, and health system factors when patients are exposed to standard care delivered by their doctors*. This is a refinement on the definition generated by researchers in Europe over the last 20 years, as they developed and tested a multi-domain complexity assessment instrument called the INTERMED [6]. It inherently recognizes the disconnection of patient needs from available services as suggested by the AHRQ MCCRN [7].

This definition recognizes that clinical and nonclinical factors contribute to health complexity. Importantly, complexity is couched in terms of factors that contribute to poor health and cost outcomes rather than the number and complicated nature of the illnesses or illness combinations experienced by patients, i.e., the clinical factors. Most, but not all, with health complexity have one or more chronic conditions. In these patients, the severity and number of chronic conditions, their acute exacerbations, and the ease with which they can be treated define the level of "clinical" complexity. Some complex patients, however, merely have an acute and serious change in their health status and no chronic condition, such as those who have recently become incapacitated due to a major auto accident. When they also have major nonclinical barriers to improvement, such as homelessness and poor access to coordinated quality clinical care, there is increased complexity, which can retard improvement or recovery.

In over 60 % of those with "medical" or "psychiatric" complexity, concurrent medical and BH issues are present [8]. Physicians and other treating practitioners spend the majority of their time addressing these primary "bio" or "psycho" components of health complexity, depending on their discipline, but generally do not attend to nonclinical contributors to complexity or even cross-disciplinary needs because they do not see nonclinical or cross-disciplinary factors as part of their accountability. Their job is to identify and treat disease in their area of clinical practice and the time they devote to it is what is reimbursed.

Nonclinical factors that contribute to health complexity are more protean. Using the INTERMED-complexity assessment grid (CAG) conceptual framework [6], elements from three other complexity domains are included, the psychological, social, and health system domains. These factors create barriers to improvement for individuals whether they have serious chronic or acute illness or not. Thus, Ellen, a patient with uncomplicated but marginally controlled non-insulin-dependent diabetes (low biological complexity) may become a patient with high health complexity in the medical setting since in addition she is recovering from alcoholic dependence with Wernicke–Korsakoff syndrome (biological and psychological complexity), has no money for hypoglycemic medications (social and health system complexity), has no insurance (health system complexity), lives on the street (social complexity), and eats a fast-food nonregulated diet (biological, psychological, and social complexity). Progression of diabetes with development of complications is much more likely in Ellen than would

Table 2.1 Integrated Case Management-Complexity Assessment Grid *(ICM-CAG)*

	Historical	Current	Vulnerability
Biological	Chronicity	Severity	Complications and life threat
	Dx dilemma	Dx/Rx challenge	
Psychological	Coping	Treatment adherence	Mental health threat
	Mental health	Symptoms	
Social	Job and leisure	Residential stability	Social vulnerability
	Relationships	Network	
Health system	Access	Getting services	Impediments
	Experiences	Coordination	

be the case for Julia, a marginally overweight college educated housewife with good insurance, a family support system, and a desire to remain healthy. More will be said about the Integrated Case Management-Complexity Assessment Grid (ICM-CAG), which has been adapted to the US health system (Tables 1.12 and 2.1), and how it helps disentangle such barriers to improvement in Chapter 4.

Nonclinical factors contributing to health complexity are as important as clinical barriers to improvement; however, they are not normally included among information gathered in a typical physician's history and physical examination. For instance, a physician's rendition of a family history will uncover the presence of immediate family members with illness loads. At the same time, it will routinely overlook interference with the patient's ability to adhere to core elements of a physician's treatment recommendations, for example, due to a patient's role as the primary caregiver for an incapacitated relative. The physician-based medical history uncovers potential genetic or environmental (biological) contributors to a patient's clinical condition but, more often than not, misses personal and social factors that could have even greater impact on outcomes. Since health complexity is defined by the presence of impediments to health and cost outcomes due to a disconnect between needs and services, as suggested by Grembowski et al. [7], rather than a focus on biological features, it is easy to see how nonclinical factors can play such a major role in identifying patients with health complexity.

Health complexity includes two components: "case" and "care" complexity [9]. Case complexity refers to patient-based clinical factors. For instance, patients may have allergies to certain medications, such as sulfonamides, or may have interacting medical conditions, such as acute mania plus lower extremity cellulitis with a fever, that influence the way that the patient can be treated. Care, or health system-based, complexity is manifest by the way that health services are supported by the system, delivered by practitioners, and available to the patient. For instance, patients experience care complexity when:

- Poor insurance coverage limits provider access, thus delaying care.
- Specialty medical services are unavailable in rural locations.
- Independent medical and BH clinical documentation systems disrupt provider communication and collaboration in care delivery.

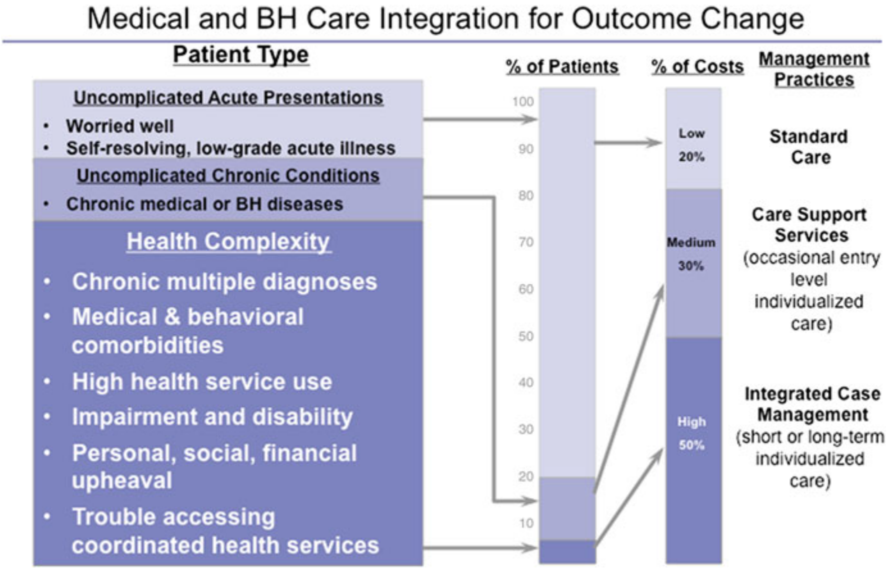

Figure 2.1 Patients with health complexity require individualized medical and BH care integration for outcome change (Data from Meier DE, Thar W, Jordan A, et al. Integrating case management and palliative care. J Palliat Med, 7:119-134, 2004)

Both case and care complexity can require a shift from standard (biomedical, including psychiatric) care to individualized care in order for patient outcomes to improve and health to stabilize.

Standard Versus Individualized Care

"Standard care" equates to traditional medical and BH services available through physicians and other treating providers in their offices and hospitals. As mentioned in Chapter 1, more than 80 % of patients with acute noncomplex and even chronic, but easily controlled, conditions do well with standard care (Figure 2.1) [10]. An additional 10–15 %, largely those with uncomplicated chronic health conditions, also fall into a subset of patients who generally do well with standard care. Some of this chronically ill population, especially the 5 % with apparent treatment resistance and high health care service use and cost, however, benefit from occasional or even sustained care support (individualized) services described in the case management and complex case management sections of the last chapter when complicating barriers to improvement arise or if chronic conditions spiral out of control. When stabilized, such patients can return to standard care.

"Individualized care," i.e., standard care augmented by assist and support services systematically provided by Level 2C to Level 4C professionals, often embellished by

Level 1C personnel, recognizes that occasional patients with chronic illnesses and the majority of patients with health complexity manifest care support needs that fall outside of those that can be easily obtained during standard medical care. Medical and BH physicians and other treating professionals are not equipped or paid to address more than the physical and/or psychiatric conditions with which patients present. Plus, they are usually paid on a unit time basis, such as through relative value units (RVUs), which incents short and focused clinical assessments. As a result, patients with health complexity are at risk for poor outcomes, progressive illness consequences, and persistent health problems unless they receive help from professionals with adequate case management competencies to support adherence and guide patients through their illness exacerbations.

This is where case managers add great value to a targeted subset of patients in virtually every physician's practice. In individualized care, case managers partner with treating clinicians and their patients with health complexity to help them overcome barriers to improvement using the case management Standards of Practice [11]. Included among the services that they provide are activities designed to overcome nonclinical obstacles, which are typically not addressed in standard care but directly affect the ability of patients to return to health.

Case Triggering Versus Health Complexity Assessments

Health complexity, an important concept most often seen most often in elderly patients, is associated with the presence and number of chronic illnesses. It increases the total cost of care. We have suggested that the perception of health complexity expand to incorporate an even smaller percentage of patients, i.e., those who tend to have progression of illness despite apparent treatment, remain impaired, and persistently use high levels of health resources (Figure 2.1) [5, 10, 12]. Uncovering health complexity is a two-stage process. The first essential stage is one in which patients are efficiently triaged into a targeted population subset of those at greatest risk for health complexity, using clinical algorithms, registries, claims databases, predictive modeling tools, etc. Monheit summarizes elements (Table 2.2) that are commonly found in predictive modeling tools designed to identify high-risk patients [13]. These parallel similar predictors of primary care physician-defined complexity described by Grant [5]. Appendix A provides examples of algorithmic strategies on how triage could be efficiently approached in populations of patients being considered for participation in integrated complex case management, both by health plans and clinical delivery systems. Regardless, the triage process should cost-effectively lead to a short list of high need patients with a minimum use of personnel time.

After a list of triaged patients at high risk is generated, little time and effort should be used in deciding who in the targeted subset will enter complex case management. Almost always, there will be more patients than there are case managers available to provide individualized assistance. Thus, once triage uncovers the 2–8 % of the population with the highest risk, those who can be contacted and are willing

Table 2.2 Predictive modeling for future high service use

	Marginal effect	**P**
• >75 Years old	9.9	<0.05
• "Fair to poor health"	18.4	<0.01
• Prior high service use	20.7	<0.01
• White, non-hispanic	5.8	<0.05
Illnesses		
– Mental health Dx	11.0	<0.01
– Cancer	9.9	<0.01
– Infectious disease	9.0	<0.01
– Diabetes mellitus	7.7	<0.05

Data from Monheit AC. Persistence in health expenditures in the short run: prevalence and consequences. *Med Care*. 2003;41(7 Suppl):III53-III64

to work with a case manager with new patient/client openings should be assigned and assistance initiated. More will be said about this in Chapter 4. It is from case management, not triage, that value comes to patients, clinicians, the sponsoring organization, and the health system. Thus, the majority of complex case management program and personnel time should be devoted to patient assessment and management rather than triage.

Impact of Health Complexity

The *Physician's Guide* recommends that patients with high health complexity be targeted for individualized case management. This is because they are patients who predictably demonstrate medical treatment resistance, poor medical and BH illness outcomes [14], high complication rates, impairment and disability [15, 16], increased health care service utilization [17, 18], and earlier mortality [19, 20]. Several studies performed in Europe, using the INTERMED approach to identify patients in various medical settings with health complexity, have found that complexity is associated with a number of negative health outcomes (Figure 2.2) [21]. This corresponds to a much larger literature using multimorbidity as the marker for complexity.

Other Factors Contributing to Bob's Complex Health Presentation

Readers will recall Bob from Chapter 1, a young but extremely high medical health care service user who presents in the medical setting either with obvious self-inflicted conditions or ill-defined infections. At the insistence of Bob's state public assistance insurance Medical Director, who had been following Bob's cost outlier

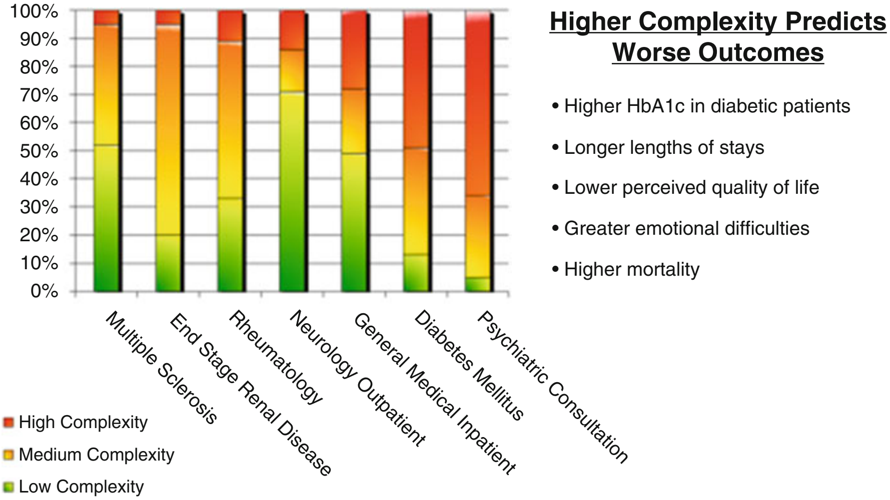

Figure 2.2 Relationship of percent with low to high complexity in various clinical settings to health outcomes (Data from de Jonge P, Huyse FJ, Slaets PJ, et al., Operationalization of biophychosoical case complexity in general health care: the INTERMED project. Aust N Z J Psychiatr 2005; 39:795-799)

status for some time, Bob was transferred to a newly opened Complexity Intervention Unit (CIU) [22] *at a quaternary care hospital. This specialized internal medicine unit at the local academic medical center was designed to provide full general medical and psychiatric services. Personnel on the CIU agreed that Bob was an appropriate candidate for admission. Since the unit was locked, it was necessary for Bob to sign in voluntarily to meet state locked unit admission requirements. Bob agreed to do so only after he was told that, if he didn't, involuntary admission procedures would be initiated. Bob was considered a potential danger to himself based on the presence of a mental condition (factitious disorder). Since he had been admitted in Gram-negative sepsis and nearly died, it could not be denied that he was a danger to himself. Multiple self-inflicted injuries supported that he had factitious disorder.*

On the CIU, Bob was automatically assigned a complex case manager, Sarah, who had training in integrated case management. Initially, he did not wish to talk with Sarah, but by the end of the first week his defenses broke down when he realized that she was not going to disappear. He began to realize that she may be able to help him even when he left the hospital, not just with his health but also with other life challenges.

In addition to better chronicling the saga of medical admissions, Sarah uncovered that when not in the hospital, Bob had no residence in his local community. He had dropped out of school in the tenth grade and had been kicked out of his home shortly thereafter. His social support system consisted of those who frequented the local community center and food shelter. Interestingly, Bob had not chosen to use recreational substances but he did have gender identity issues. There was no evidence of a mental health disorder, such as depression, psychosis, or mania, but he

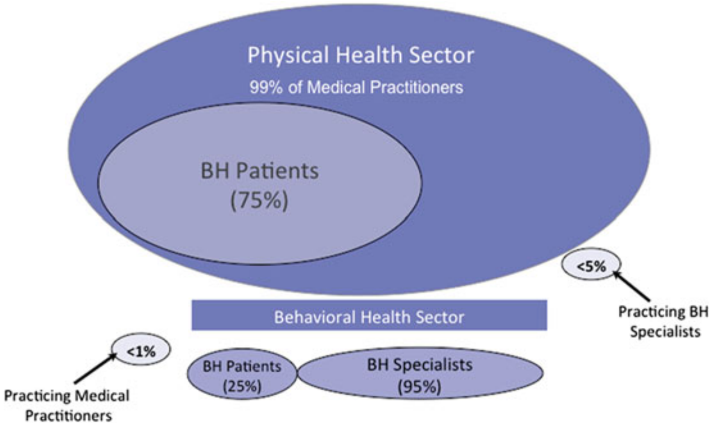

Figure 2.3 BH patient-BH treatment access mismatch (Adapted from Kathol R, Sargent S, Melek S, et al., Nontraditional mental health and substance use disorder services as a core part of health in CINs and ACOs, in Clinical Integration: Accountable Care and Population Health, 3rd edition. Virginia Beach, VA: Convurgent Publishing, LLC, 2015, with permission)

did meet criteria for borderline personality disorder and had been arrested on several occasions for minor theft. The county insurance program had covered Bob's health care costs for the past several years and his total health care bill at age 19 was nearly three quarters of a million dollars. Over half was incurred in the last year and associated with several near-death experiences.

The Interaction of Medical and Behavioral Health Conditions

BH conditions play an important role as physicians assist patients with health complexity since BH comorbidity is common in those with complex chronic medical conditions. The combination is associated with medical and BH treatment resistance, persistent illness, higher complication rates, impairment and disability, and greater total health care service use [14, 23–26]. Of the top 5 % of patients with multimorbidity, on average 60 % has comorbid BH conditions [8]. As the number of chronic medical illnesses increases, the percentage of patients in the top 5 % rises and peaks at about 75 %.

Three-fourths of patients with BH conditions are primarily or exclusively seen in the medical setting (Figure 2.3). Historically, it has been thought that patients with comorbid BH conditions treated in medical settings had less acute psychiatric illnesses than BH patients seen in the primary BH setting. Recent evidence, however, suggests that this is not true, even for patients with schizophrenia and bipolar disorder [27]. In absolute numbers, more patients with serious BH conditions, including substance use disorders, eating disorders, delirium, depression, and dementia, are seen in the non-BH sector than the BH sector.

Table 2.3 Total health costs in patients with BH conditions

	Total population served	% of population with BH claims	Total annual spend	% BH[a] spend	% of total medical claims incurred by BH Pop.
Commercial	198.8 M	14	$1.0 T	6 ($42.9B)	28.7 ($275B)
Medicare/Medicaid	91.8 M	9/20	$0.67 T	7.7 ($46.2B)	26.3 ($163B)
Total	290.6 M	14	$1.7 T	6.8 ($91.8B)	27.5 ($444B)

[a] Includes BH meds for commercial and Medicaid but not Medicare

Data from Melek, SP, Norris, DT, and Paulus, J. Economic impact of integrated medical-behavioral healthcare: implications for psychiatry. Milliman American Psychiatric Association Report, April 2014. Milliman Inc, Denver; 2014

For this reason, primary and specialty medical physicians and other treating practitioners need to be familiar with the basics of BH assessment and first-line treatments. Perhaps more importantly, they also need access to psychiatrists and doctoral level psychologists, the BH specialists most able to institute second- and third-line BH treatments. This is especially true for patients with health complexity who often fail first-line intervention attempts. BH professionals with lesser levels of assessment and intervention skills are not equipped to take on these higher level tasks.

The rationale for attending to BH conditions in the medical setting involves more than just the need to improve access, clinical care, and health outcomes for BH issues. On average, patients with BH conditions have twice as high annual claims expenditures as patients without and yet refuse to access BH services in the BH setting [18, 28]. Most physicians are not aware that 80 % of total health care costs in patients with BH conditions are for medical services [18]. The high cost of general medical care in patients with BH comorbidity has been demonstrated to varying degrees for insured patients in commercial, Medicare, and Medicaid programs nationally (Table 2.3). If ignored, medical and BH conditions will persist and progress, often with synergistic effects. Further, with continued separation of general medical and BH services, care delivery systems and the physicians who work in their networks of providers will find that they have difficulty capturing health and savings, both requirements of ACOs in the post-ACA world. The 14 % of patients with BH conditions account for nearly 32 % of the total health care budget. This is big money and represents low hanging fruit.

Treatment of BH Conditions

There remain many medical practitioners who think that BH conditions are largely untreatable. Thus, they consider that expending resources on BH care is unproductive; especially since independent BH payers poorly reimburse for BH services in

Table 2.4 Variable responsiveness to physical and BH condition treatment

Behavioral health	Physical health
• Highly treatable – Affective/anxiety disorders, delirium, acute psychosis	• Highly treatable – Peptic ulcers, pneumonia, kidney stones
• Moderately treatable – Attention deficit hyperactivity disorder, eating disorder, alcoholism, autism	• Moderately treatable – Common cold, diabetes, back pain, headache, Parkinson's disease, osteoarthritis
• Difficult to treat – Dementia, antisocial/borderline personality disorder	• Difficult to treat – Drug-resistant tuberculosis, amyotrophic lateral sclerosis, cystic fibrosis

the medical setting. There is no question that a number of BH conditions are more difficult to treat than others, just as with medical conditions, such as completed stroke or esophageal cancer (Table 2.4). Research on treatment of BH conditions during the last 25 years, however, has been substantial with many new outcome changing and cost-effective approaches to treatment added and a number of less successful treatments discarded [29]. Even in those with substance use disorders, it is no longer appropriate to allow patients to go untreated since the combination of behavioral and pharmacologic interventions for substance dependence can lead to sobriety and total cost reduction [30–33]. Thus, it is as possible to institute evidence-based interventions for treatment of BH conditions as it is for medical conditions. Further, there are now promising models for implementation of evidence-based BH treatments in medical settings [22, 34].

Access to Cross-Disciplinary Services

Figure 2.3 shows that the majority of BH patients are actually seen in the medical setting but the majority of BH providers deliver services only in the BH setting. This is solely the result of an independently funded and managed BH budget used to pay for BH services in the USA and most other countries. BH practitioners, including psychiatrists, are paid to practice in segregated BH settings because this is the way that fastidious BH payers can target BH reimbursement only for BH professional and facility fees [35]. By doing so, it prevents inadvertent use of BH funds for medical services but also leads to low psychiatric physician insurance participation, and thus, poor access for patients to needed services (Figure 2.4) [36, 37]. BH is the only allopathic medical specialty that is paid by totally independent insurance payers.

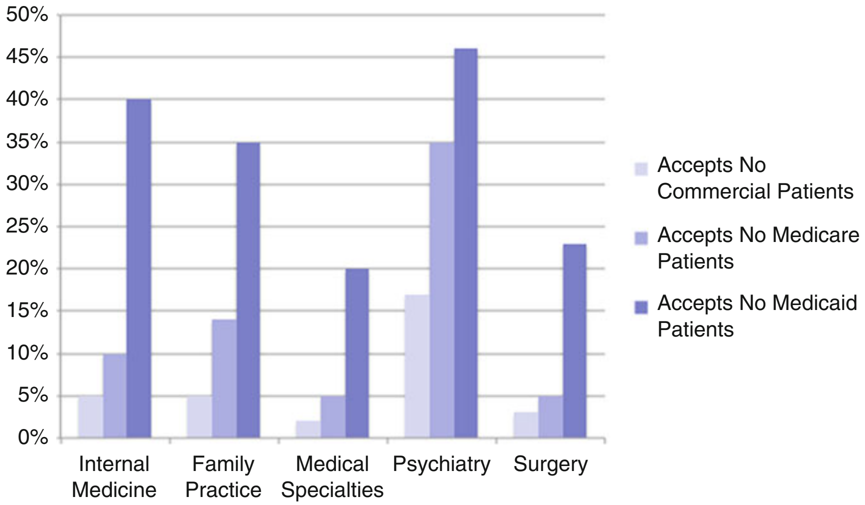

Figure 2.4 Access to BH services hampered by low psychiatrist insurance participation (Data from Boukas, et al., Data Bulletin: Results from Health System Change Research, 35:1-11, 2009)

Even when geographic proximity of medical and BH providers is present, as is commonly the case in academic medical centers and large hospital and clinic systems, divergent insurance company provider networks for medical and BH professionals creates additional hurtles for patients and the physicians desiring to collaborate in their patients' care. It comes as no surprise, therefore, that access for the majority of medical patients with BH comorbidity and their primary and specialty medical physicians to specialty BH assessment and treatment is a challenge in the medical setting [38]. This is exacerbated by the fact that the majority of medical patients with BH comorbidity refuse to access BH services in the BH sector, presumably due to stigma but likely also due to inconvenience and cost. As a result, nearly two-thirds of medical patients with comorbidity receive *no* treatment for their BH conditions [39]. This is true in virtually all countries and cultures [40]. Of the third that does receive treatment in the medical setting, for only one of nine will it be outcome changing [41, 42].

Patients with primary BH conditions fare no better with regard to access to general medical assessments and intervention. In a comparison of medical care for patients with schizophrenia to a community sample, 39 % of patients with schizophrenia received no treatment for medical disorders compared to 17 % of those without [43]. These findings are supported in another study showing that barriers to treatment are substantially greater for those with BH problems (Table 2.5) [44]. This correlates well with a growing literature showing high and early mortality in those with serious mental illness [19, 23, 45].

While it is no longer acceptable from a health and cost perspective to perpetuate segregated general medical and mental health assessment and treatment, it is not

Table 2.5 Barriers to treatment of medical disorders in BH patients

	Psychotic disorders (N = 592)	**Bipolar disorder (N = 511)**	**Major depression (N = 1828)**
	(Adjusted odds ratio)		
Source of regular primary care	0.55	0.74	0.97
Delayed care due to cost concerns	2.56	4.15	3.75
Unable to get needed care	4.01	6.37	4.46
Unable to get prescription for medication	4.83	5.45	4.80

Data from Bradford DW, Kim MM, Braxton LE, Marx CE, Butterfield M, Elbogen EB. Access to medical care among persons with psychotic and major affective disorders. *Psychiatr Serv*. 2008;59(8):847-852

within the scope of this chapter to help physicians understand how to effect a change to integrated service delivery. Other resources can be accessed that help address this issue [29, 35, 46, 47]. The topic also resurfaces in Chapter 9 in which ICM is connected to the delivery system in which it is provided. It is important for physicians to recognize that, as they work with integrated complex case managers, for whom coordination of medical and BH services is a part of their accountability, the managers need to have an understanding of the cross-disciplinary fragmentation described above (Figure 2.5) and strategies to assist patients with the health system-based care complexity challenges they create [48].

Medical and BH Comorbidity's Effect on Treatment and Its Outcomes

The prevalence of psychiatric illness in patients with physical disorders is estimated to be 40 % [23, 49, 50]. In those with chronic medical illnesses, the percentage can be higher [50]. Conversely, about half of patients with serious mental conditions will have two or more chronic medical conditions and three-quarters will have at least one [51]. If the prevalence of BH conditions in patients seen in the physical health setting and general medical disorders in the BH setting is as high as the data suggest, it is clear how concurrent illness impacts health outcomes and cost, especially when cross-disciplinary care is difficult to access.

The combination of depression and diabetes mellitus is one of the best-studied regarding health outcomes in those with comorbid conditions. This large series of studies show consistently improved health outcomes and cost savings using a psychiatrist supervised case manager assisted intervention, called collaborative care. They have demonstrated that pre-intervention those with depression and diabetes have lower adherence to healthy behaviors and medication taking (Table 2.6 and

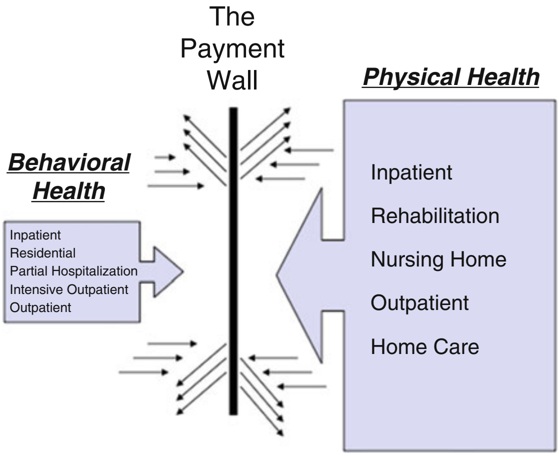

Figure 2.5 Barriers to care created by segregated physical and BH reimbursement (Adapted from Kathol RG, Perez R, Cohen JS, The Integrated Case Management Manual, New York, Springer Publishing Co., 2010, with permission). Used with permission from The Integrated Case Management Manual: Assisting Complex Patients Regain Physical and Mental Health by Kathol RG, Perez R, Cohen JS, 2010, Springer Publishing Company. Copyright 2010 by Springer Publishing Company

Figure 2.6) [52], more symptoms (Figure 2.7) [53], worse diabetes control (Figure 2.8) [54], greater disability and job loss (Table 2.7) [55], and higher mortality [56] than those without. These findings closely parallel a growing number of studies in patients with multiple other medical and BH illness combinations.

Adverse clinical effects of medical and BH illness combinations also negatively influence total health care expenditures (health care service use) for those with BH comorbidity. Table 2.3 has already demonstrated the gross differences in total cost on a national level. When health service use is explored at a regional level while subdividing patients into various BH illness categories, it becomes evident that total health resource use is high in medical patients with comorbid BH illness. The majority of clinical services used by those with BH conditions are for medical services and pharmacy (Figure 2.9) [28]. Only those with psychotic disorders, which make up less than 0.5 % of the total population, use almost as many BH services as medical. Further, less than 30 % of medications used in comorbid BH patients are psychotropic. The potential for cost savings through improved BH care occurs more through reduction in spending on general medical services than on BH [46]. Only when physical and BH treatment and support are connected is total health cost lowering possible through improved BH outcomes. This is core to the concept of integrated case management.

Table 2.6 Effect of depression on healthy behaviors in diabetic patients

Self-care activities (past 7 days)	No major depression	Major depression	Odds ratio	95 % CI
Healthy eating ≤1 time/week	8.8 %	17.2 %	2.1	1.59–2.72
5 Servings of fruit/vegetables ≤1 time/week	21.1 %	32.4 %	1.8	1.43–2.17
High fat foods ≥6 times/week	11.9 %	15.5 %	1.3	1.01–1.73
Physical activity (>30 min) ≤1 time/week	27.3 %	44.1 %	1.9	1.53–2.27
Specific exercise session ≤1 time/ week	45.8 %	62.1 %	1.7	1.43–2.12
Smoking: Yes	7.7 %	16.1 %	1.9	1.42–2.51

Data from Katon W, von Korff M, Ciechanowski P, et al. Behavioral and clinical factors associated with depression among individuals with diabetes. *Diabetes Care*. 2004;27(4):914-920

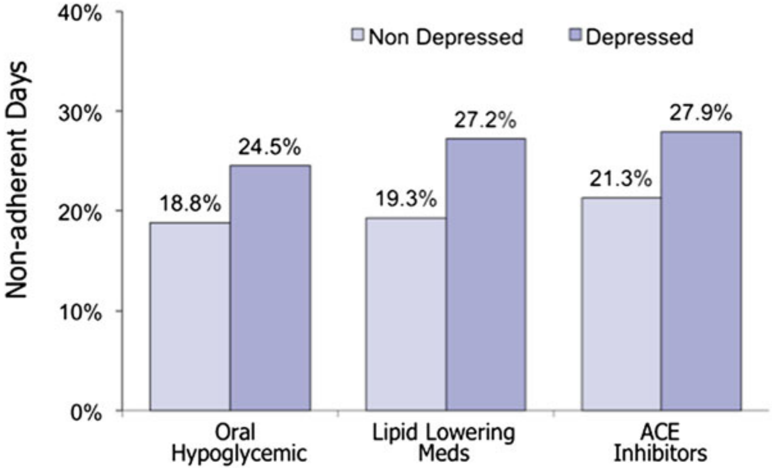

Figure 2.6 Medication adherence in depressed and nondepressed patients with diabetes (Data from Lin EH, Katon W, Von Korff M, et al. Relationship of depression and diabetes self-care, medicantion adherence, and preventive care., Diabetes Care, 27:2154-2160, 2004)

General Medical and Mental Health Interaction in Children and Adolescents

Physical and mental health multimorbidity in children/youth has similar consequences to those found in adults [57–59]. Nearly 7 % of children and adolescents drawn from a school-based epidemiologic sample have four or more combined general medical and mental health conditions [57]. This is associated with significantly greater child/ youth impairment of health and well-being on 8 of 12 Child Health Questionnaire domains even when compared to children/youth with three or fewer conditions.

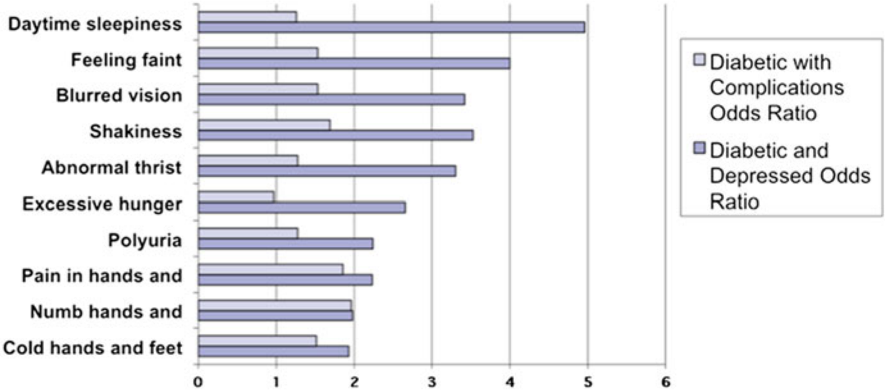

Figure 2.7 Relationship of depression to diabetic symptoms (Data from Ludman EJ, Katon W, Russo J, et al. Depression and diabetes symptom burden. Gen Hosp Psychiatry 26:430-436, 2004)

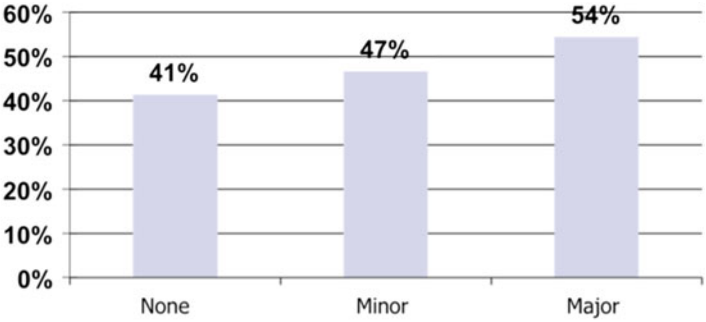

Figure 2.8 Effect of depression on Hb_{A1c} control in patients with diabetes (Data from Katon W, von Korff M, Ciechanowski P, et al. Behavioral and clinical factors associated with depression among individuals with diabetes. *Diabetes Care*. 2004;27(4):914-920)

Children/youth with chronic conditions, such as asthma and cystic fibrosis, who have concurrent BH conditions are at greater risk for poor outcomes than those without [58]. Of particular concern is the finding that these children/youth not only have worse health but that they are less able to participate in age appropriate child/youth activities [59]. This is covered in greater depth in Chapter 3.

The Role and Value of Integrated Physical and BH Complex Case Management

In Chapter 1, many forms of patient assistance and support programs were reviewed and yet this *Physician's Guide* cursorily hones in on a discussion of integrated complex case management for those with health complexity. There is a very good reason

Table 2.7 Annual work days lost and disability bed days for patients with depression and/or diabetes

	Neither	Diabetes	Depression	Both
Work days lost	• 4.5	• 6.3	• 13.2	• 13.1
– Odds ratio	(1.0)	(1.5)	(3.08)	(3.25)
Disability bed days				
– Employed	• 2.2	• 3.5	• 7.9	• 23.4
– Unemployed	• 6.5	• 8.5	• 23.2	• 45.8
– Odds ratio	(1.0)	(1.63)	(4.0)	(5.61)

Data from Egede LE. Effects of depression on work loss and disability bed days in individuals with diabetes. *Diabetes Care*. 2004;27(7):1751-1753

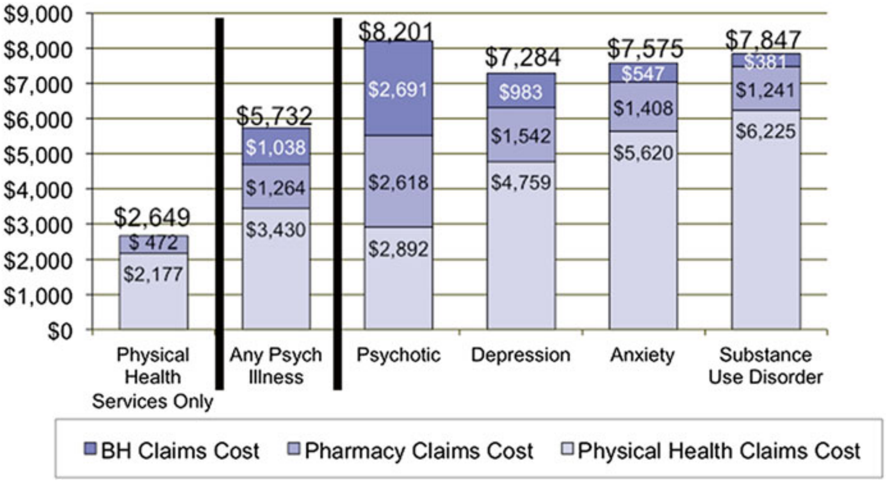

Figure 2.9 Annual claims costs for Medicaid patients with and without BH conditions (Data from Thomas MR, Waxmonsky JA, Gabow PA, Flanders-McGinnis G, Socherman R, Rost K. Prevalence of psychiatric disorders and costs of care among adult enrollees in a Medicaid HMO. *Psychiatr Serv*. 2005;56(11):1394-1401)

for this. Patients with health complexity, the 2–5 % of patients that use 50–70 % of health resources, are a poorly served population for whom even small efforts to improve their care can often lead to health improvement and substantial cost reduction. For assist and support services to bring value to patients, their treating physicians, and the health system, this is the population with the greatest potential and the place to start.

Some physicians will be dissatisfied with targeting patients with health complexity since the approach selectively excludes those with less complicated health situations from access to the assist services of trained case managers. Complex and integrated complex case management targets a small subset at the expense of the majority. There are two ways that we argue the logic of targeting high-cost, high-need patients for prioritized case management.

First, if all patients had unfettered access to complex case managers, there would need to be a massive increase in trained professionals (both medical and BH) to fill these roles. Without this, the few that serve the "total population" would need to accept that time constraints would not allow delivery of services that would change outcomes for even a small number of patients assisted. Perhaps more importantly, those with health complexity would fall to the bottom of the assistance ladder since they are so complicated and individually take so much time. Thus, by neglecting patients with the most health complexity, it severely limits the opportunity to truly achieve the three goals of the Triple Aim. Patients with health complexity would largely remain unhelped.

The second and more substantial argument is that by prioritizing patients with health complexity for complex and integrated complex case management interventions, health plans, care delivery systems, and others running case management programs are more likely to realize clinical and economic value with the potential for return on investment (ROI). Even when patients with health complexity are targeted, there are usually more patients than the number of case managers available to assist with their care. Thus, it makes sense to focus on assisting those for whom the greatest benefit can be derived. Presuming that this leads to clinical and economic success, the number of case managers can be expanded to serve a greater percentage of the population over time.

Data above substantiate that the presence of medical and BH comorbidity have unfavorable clinical and cost consequences. Unless the implementation of integrated complex and complex case management can alter clinical and cost outcomes to a greater extent than is available in today's "standard care" clinical service delivery settings then it is not worth the effort to undergo the significant changes necessary for the development of specialized case management services. This is a real concern since a recent AHRQ review of 109 randomized controlled trials (RCTs) of outpatient "medical" patient health care assistance and support programs, called "case management" but containing many studies that were at best low intensity with questionable value-added services included, suggests that general application of current assist and support methodologies has only moderate evidence of value in selected areas of care delivery (Table 2.8) [60]. If, however, approaches to case management with targeted outcome changing ingredients are used, such as those associated with integrated complex case management, then desired outcomes are more likely to occur.

Value-Based Integrated Complex Case Management

Since the late 1990s, evidence indicates that properly constructed case management programs can yield health and cost improvements. For instance, Naylor et al. demonstrated that high-risk elderly patients assisted with 4 weeks of proactive multidomain post-discharge case management procedures showed health and cost improvements (Table 2.9) [61]. Similar findings have been reported in other

Table 2.8 Where we are today (outpatient "medical" assist and support outcomes)—review of 109 RCTs on >100,000 patients

- High evidence
  - No reduction in: mortality (dementia) or Medicare expenditures
- Moderate evidence
  - No reduction in: problem behavior, delay in nursing home placement (dementia); rate of hospitalization (general medical)
  - Improves satisfaction, focused treatment adherence/self management behaviors, caregiver depression, selected diabetes and tuberculosis outcomes

Data from Hickam DH, Weiss JW, Guise JM, et al. Outpatient Case Management for Adults With Medical Illness and Complex Care Needs. In: Quality AHRQ, ed. Rockville (MD) 2013

Table 2.9 Cost savings with case management in the high risk[a] elderly (*post-discharge from hospital*)

- N (CM) = 177; (usual care) = 186
- Intervention—4 weeks of proactive multi-domain case management after discharge
- Improvements (at 24 weeks post-discharge)
  - Readmissions = 49 vs. 107 ($p<0.005$)
  - Hospital days = 1.53 vs. 4.09 ($p<0.001$)
  - Readmission costs = $427,217 vs. $1,024,218 ($p<0.001$)
  - Total post-discharge costs/patient = $3630 vs. $6661 ($p<0.001$)

[a] High risk =>80 years old; inadequate support; chronic medical illness; depression; functional impairment; poor health rating; non-adherence; multiple hospitalizations

Data from Naylor MD, Brooten D, Campbell R, et al. Comprehensive discharge planning and home follow-up of hospitalized elders: a randomized clinical trial. *JAMA*. 1999;281(7):613-620

populations when using core case management techniques, primarily in patients with high need and high cost [60, 62–67].

It was in light of studies that have shown clinical and fiscal value to patients that integrated complex case management was developed. ICM moved from traditional case and complex case management in which the focus was most often on short-term assistance in patients with one or more biomedical conditions to a longitudinal multi-domain complexity-based approach (Table 2.10) [48]. In the former, process outcomes documented success whereas in ICM clinical and cost outcomes were measured over time as patients moved toward graduation and return to standard care.

Using integrated complex case management, early adopters, such as the Hudson Health Plan (HHP), found that successes in complicated patients were possible and may be robust (Table 2.11). Sixty-one of the most complicated patients consistently covered by HHP over a 24-month period, over 75 % of whom had both medical and BH conditions, demonstrated lower total health care costs, reduced emergency room use, greater adherence to treatment recommendations, and improvement of multi-domain barriers to improvement.

Table 2.10 Traditional versus integrated complex case management

Traditional	Integrated
• Illness-focused • Problem-based (check list) • Occasionally longitudinal • Biomedical clinical assessment training • Regular handoffs • Illness targeted care plans • Graduation based on process measurement and completion, e.g., calls made, patients/clients touched	• Complexity-focused • Relationship-based (dialogue) • Always longitudinal • Multi-domain assessment and management training • Few handoffs • Biopsychosocial and health system-based care plans • Escalation of care or graduation based on clinical, functional, and cost outcome measurement

Table 2.11 Preliminary outcomes with ICM at 2 years in 61 NYS-DOH[a] chronically ill members

	2 Years pre-enrollment	2 Years post-enrollment
Total inpatient cost	$1.7 M	$0.9 M
Inpatient cost PMPM	$1154	$624
Average ER visits	8.9	7.6
Total ER visits	545	461
Missed appointments	125	98
Missed medications	95	77
ICM-CAG (initial vs. follow-up)	30	25

Data from Hudson Health Plan, Westchester Cares Actions Program (WCAP), presented at CMSA Annual Meeting, 2012

[a] *NYS-DOH* New York State Department of Health

Integrated Complex Case Management: The Next Generation

This chapter suggests that there is a subset of patients, i.e., those with health complexity, for which the individualized services provided through ICM managers have the greatest potential to lead to health and cost savings, perhaps substantial. Part of this is related to their ability to address needs related to not only commonly co-occurring cross-disciplinary medical and BH conditions but also to include non-clinical barriers to improvement as they assist patients stabilize their health. We consider this a major contribution to the next generation of value-based, not volume-based, health care.

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Chapter 3
Health Complexity and the Interaction Between Physical and Behavioral Health Conditions in Children and Youth

> *Children are not little adults.*
>
> —World Health Organization, July 2008

Chapter Objectives

- *To define "health complexity" and its importance in integrated case management for children/youth.*
- *To describe the effects of the interaction of comorbid physical and behavioral health conditions on clinical and cost outcomes in children/youth with health complexity.*
- *To introduce the concept of social determinants of health for children/youth and their families.*
- *To summarize the potential for value through multidomain physical and behavioral health integrated case management in children/youth with health complexity.*

Building on the content for adults presented in Chapter 2, this chapter defines health complexity in children/youth, examines the interplay between pediatric biological and psychological conditions, and discusses the effects of family and social stress on health outcomes. As with adults, understanding how these individual factors interact and influence the health of children/youth provides an important foundation for learning the methods and rationale behind the pediatric integrated case management (PICM) program.

Care integration has been a focus of pediatric medical service delivery even before it became popular in the adult setting. For example, the Patient-Centered Medical Home (PCMH) originated in pediatrics to help children/youth with chronic health conditions better address their health challenges [1]. In 2002, the PCMH was endorsed by the American Academy of Pediatrics as the ideal care delivery system for all children/youth [2]. There are examples nationally of clinical systems that have begun incorporating pediatric medical and BH services [3]. For instance, there is emerging evidence supporting improved clinical outcomes for children/youth, primarily for adolescents treated for BH conditions—especially depression—in integrated primary care settings offering collaborative care services [4, 5]. Other integrated models have been developed and are currently in the process of deployment nationally [6].

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However, as with adults, historically the general medical and BH clinical and payment systems for children/youth have been separate, leading to segmentation of services despite the intent for care integration. Pediatrics is just beginning to define meaningful ways to include cross-disciplinary physical and behavioral components of health for children/youth, and many programs are very early in their development. As a practical matter, children/youth with BH problems and their families continue to experience challenges navigating separate general medical and BH systems, as well as the community-based supports associated with each.

Intuitively, there are advantages to treating children/youth with BH problems in a family-friendly setting—such as their primary care provider's office—that support improved health outcomes. Children/youth may be more willing to engage in BH treatment if the facility and staff are familiar to them, and the BH providers from whom service is being requested are trusted clinical colleagues who share pediatric workspace. Furthermore, given difficulties with transportation and time away from school and work, accessing one convenient location to receive total healthcare is beneficial for families. Finally, given that pediatric medical and BH issues are significantly influenced by traditionally "non-medical" community resources, such as schools, public health agencies, financial entitlements, among others, incorporating BH services with other medical services has significant potential to lead to better outcomes and more efficient and effective care.

In today's world of pediatrics, integrated medical and BH service is desired but generally not present. Thus, PICM managers must recognize that they will be working largely in a health environment that continues to segregate pediatric from BH care for children/youth. The PICM program provides helpful guidance for case managers operating in either integrated or other healthcare settings.

Health Complexity in Children/Youth

Children with Special Healthcare Needs (CSHCN) are defined by the Maternal and Child Health Bureau as those who have, or are at increased risk for, chronic conditions affecting physical, developmental, behavioral, or emotional health, resulting in increased rates of healthcare service utilization compared to children/youth in general (Table 3.1) [7]. The population of CSHCN can be conceptualized using definitional domains that include functional limitations, increased healthcare utilization, chronic health conditions, and family- and child/youth-related service needs [7]. For example, CSHCN may have severe functional limitations and/or may be dependent on technology, such as ventilators, feeding tubes, or dialysis machines. They may have increased healthcare utilization, have one or more severe chronic health conditions, and/or have significant health and social needs that impact family functioning [7]. These domains may overlap contributing to complexity in the child/youth's and family's health-related presentation.

Table 3.1 Characteristics of Children with Special Healthcare Needs (CSHCN)

- Children who have, or are at increased risk for, the following:
  - One/more chronic health conditions
  - Increased healthcare utilization compared to children in general
  - Decreased functional ability due to a chronic health condition
  - Increased family and/or child-related health service needs

Data from Simon TD, Mahant S, Cohen E. Pediatric hospital medicine and children with medical complexity: past, present, and future. Curr Probl Pediatr Adol Health Care, 42(5):113-119, 2012

Building upon this definition of CSHCN for clinical and research purposes, the Center of Excellence on Quality of Care Measures for Children with Complex Needs (COE4CCN), funded by the Centers for Medicare & Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ), has defined three levels of childhood medical complexity based on the presence and duration of specific ICD-9 conditions experienced by children/youth: (1) children with complex chronic disease (C-CD), (2) those with non-complex chronic disease (NC-CD), and (3) those without chronic diseases (NC) (Table 3.2) [8]. The subgroup of patients with C-CD is defined by the presence of health conditions affecting *two* or more body systems, progressive disorders associated with decreased life expectancy, dependence on medical assist devices (technology) continuously for at least 6 months, and/or malignancies [8]. The group with NC-CD includes conditions affecting a *single* body system, lasting at least 1 year. Non-complex chronic diseases are not progressive, but they may be lifelong with episodes of acute exacerbation [8]. Finally, non-complex non-chronic diseases include health conditions affecting a single body system that are expected to last less than 1 year [8].

General medical and BH conditions are included in both the CSHCN and COE4CCN definitions of health complexity [7, 8]. According to the COE4CCN, the health status of a child/youth with diabetes mellitus type I and severe depression would be categorized as C-CD, whereas that of a child/youth with asthma or anxiety alone would be classified as NC-CD. These systems are useful for identifying children/youth with special healthcare needs and those who may be at risk for increased healthcare service use.

The CSHCN and COE4CCN definitions provide national standards for identifying children/youth with severe and complex health conditions. The PICM program complements these definitions by adding developmental, social, and health-system factors that have been shown to influence health outcomes and service utilization beyond an individual's disease categories alone. Also the PICM program provides a method to operationalize these definitions into actionable clinical and case management goals. Those involved in adult ICM have drawn on the expertise of pediatricians, child psychologists and psychiatrists, and pediatric case managers to expand the ICM concepts of complexity used in adults by translating them into a complexity

Table 3.2 Childhood medical complexity

- Complex chronic disease (C-CD)—any of the following:
  - Health conditions affecting two or more body systems
  - Progressive disorders associated with decreased life expectancy
  - Continuous dependence on medical assist devices for >6 months
  - Malignancies
- Non-complex chronic disease (NC-CD)—both of the following:
  - Non-progressive health conditions affecting 1 body system
  - Lasting at least 1 year
- Non-complex non-chronic (NC)—both of the following:
  - Non-progressive health conditions affecting 1 body system
  - Lasting less than 1 year

Data from Simon TD, Cawthon ML, Stanford S, et al. Pediatric medical complexity algorithm: a new method to stratify children by medical complexity. *Pediatrics*. 2014;133(6):e1647-1654

assessment specifically designed for children/youth. It was through this approach that PICM was first formulated [9].

PICM-Based Health Complexity in Children/Youth

PICM does not limit itself to the presence and severity of acute or chronic biological and/or psychological conditions. It also includes social and health-system-related barriers to improvement with which children/youth and their families present. Children/youth may have measureable high health complexity, typified by:

1. Multiple general medical conditions, multiple psychiatric conditions, or a combination of the two
2. Significant social, school, or family issues
3. Problems related to healthcare access
4. Other factors among the 25 items identified through the Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG) (Table 3.3)

Like the adult ICM program, the PICM program was developed using a complexity platform, which has the benefit of including traditional biological and psychological-related illness factors as well as non-traditional "non-clinical" factors that are associated with negative health and cost outcomes for children/youth and their families. Addressing identified barriers to improvement that extend beyond traditional illnesses are considered as important as direct disease intervention. Ultimately, the goal is health stabilization and decreased service-related costs, but PICM believes that this is attenuated when interfering personal and life circumstances prevent follow-up though on health-focused treatment.

Table 3.3 Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG)

Domain	**Historical**		**Current state**		**Vulnerability**	
Total score =	Consideration	Score	Consideration	Score	Consideration	Score
Biological	Chronicity (HB1)		Symptom severity/impairment (CB1)		Complications and life threat (VB)	
	Diagnostic dilemma (HB2)		Diagnostic/therapeutic challenge (CB2)			
Psychological	Coping with stress (HP1)		Treatment adherence (CP1)		Learning and/or mental health threat (VP)	
	Mental health history (HP2)					
	Cognitive development (HP3)		Mental health symptoms (CP2)			
	Adverse developmental events (HP4)					
Family/social	School functioning (HS1)		Family functioning (CS1)		Family/school/social system vulnerability (VS)	
	Family and Social relationships (HS2)		Child/youth support (CS2)			
			Caregiver/family support (CS3)			
	Caregiver/parent health & function (HS3)		School and community participation (CS4)			
Health system	Access to care (HHS1)		Getting needed services (CHS1)		Health-system impediments (VHS)	
	Treatment experience (HHS2)		Coordination of care (CHS2)			

Chapter 2 defines ICM-based adult health complexity as the *interference with the achievement of expected or desired health and cost outcomes due to the interaction of biological, psychological, social, and health-system factors when patients are exposed to standard care delivered by their doctors.* This definition applies equally well to children and youth. The term "standard care" in this definition refers to traditional medical care that focuses on physical or BH problems to a greater extent than health system and social problems. It is primarily, if not exclusively, delivered by treating practitioners.

Standard care, with its biomedical focus, does not consistently address life circumstance challenges even though they may be major contributors to persistent poor health and high service use. Additionally, the divide between medical and BH assessment and treatment often leads to one or the other of these being neglected or inadequately treated. As will be discussed later in this chapter, general medical, BH, clinical, and non-clinical factors often coexist and interact. To achieve maximal health and economic outcomes, each should be addressed in a cohesive and coordinated fashion.

Using the PICM-CAG, categorization of chronic physical and BH conditions with their related functional limitations conforms largely to the definitions previously described for CSHCN and the COE4CCN. However, the PICM-CAG incorporates other components that influence health and economic outcomes, including problems related to health insurance, school attendance and performance, coping mechanisms, access to transportation, history of abuse/trauma, housing safety and stability, and caregiver functioning.

Use of the PICM-CAG is similar to use of the ICM-CAG in the adult ICM program. It helps PICM managers identify actionable child/youth- and family-centric barriers, the ways in which they interact, and the priority that should be given to them as a care plan is developed. The PICM-CAG literally paints a picture showing the elements that impede progress toward positive health outcomes. By guiding PICM managers through the identification and then methods for addressing multi-domain barriers, the PICM program supports health systems in addressing the total health needs of children and youth.

Association of Medical Complexity in Children/Youth with Healthcare Utilization and Quality of Life

The population of children/youth with health complexity is increasing as a result of continued improvements in the treatment of previously life-threatening conditions, such as prematurity, cerebral palsy, and cystic fibrosis. Given their health- and service-related needs, children/youth with health complexity demand increased attention by clinical providers and the health system to ensure maximum function and a productive extended quality of life.

As described in the definition of CSHCN, studies show that children/youth with health complexity use substantial healthcare services. In 2000, CSHCN comprised

Table 3.4 Health service use for youth with health complexity

- 16 % of youth under 18 years old qualify as CSHCN, but account for 41 % of pediatric medical expenditures
- 9.6 % of Medicaid youth use BH services, but account for 38.4 % of pediatric Medicaid spending

Data from Chevarley, AHRQ, 2006

an estimated 16 % of children/youth younger than age 18, but accounted for 41 % of total pediatric medical expenditures (Table 3.4) [10].

Compared to children/youth without special healthcare needs, CSHCN have an estimated 3–10 times increase in medical expenditures driven mainly by higher utilization of inpatient care [11–15]. The most frequent diagnoses associated with inpatient treatment for CSHCN include complications related to the cardiovascular and pulmonary systems [12]. Other substantial sources of healthcare expenditures for CSHCN include physician costs, prescription medication costs, and non-physician services, such as in-home healthcare [11, 12].

The COE4CCN classification system predicts healthcare utilization based on increasing levels of medical complexity. Specifically, individuals in the C-CD category have been shown to have higher healthcare service use compared to those in the NC-CD and no chronic disease categories [8]; however, the subgroup of children/youth with NC-CD has less predictable healthcare service utilization, likely related to the episodic nature of exacerbations of their chronic illness [8].

A national study of Medicaid BH utilization and expenditures for children/youth in 2005 revealed that an estimated 9.6 % of Medicaid children/youth used BH services, but accounted for 38.4 % of total pediatric healthcare spending [16]. For children/youth who used BH services, total spending on BH and physical health services was high, an estimated $8520 per member per year [16]. These costs were driven mainly by BH service utilization, except for children/youth receiving Supplemental Security Income (SSI) disability whose physical health service use was slightly higher [16]. BH services representing the highest levels of expenditure included residential treatment, outpatient treatment, and psychotropic medications. Adolescents were the most likely to use high-cost services, such as residential treatment, inpatient care, and emergency care.

When compared to children without special healthcare needs, the health-related quality of life for CSHCN and their families is poor, particularly for CSHCN with psychiatric conditions [17, 18]. Out-of-pocket expenditures for families of CSHCN with private insurance may be substantial. Parent/caregiver employment and financial solvency may be compromised given the demands associated with supporting their child/youth's healthcare needs [11, 19, 20]. Financial stressors may be particularly challenging for those caring for children/youth with BH conditions [21, 22], possibly related to the traditional lag of financial support for behavioral services compared to general medical conditions. Families of children/youth with developmental disorders, including autism spectrum disorders, report problems accessing referrals and experience significant unmet healthcare needs [22, 23]. In general, families of CSHCN report challenges related to coordination of services given by the multiple specialists involved in the care of their children (personal communication [KHK], Massachusetts Health Quality Partners Task Force on Care Coordination).

To date, there are no studies that assess the association of PICM-CAG-based complexity and either cost or quality of life for children/youth with health complexity. Since the PICM-CAG parallels, albeit expands, the CSHCN and COE4CCN conceptual frameworks, one would expect that cost and quality of life findings in the studies above would be similar, but confirmation awaits future study. What is important about the addition of the PICM-CAG approach is that it, as with the adult version, disentangles actionable barriers to improvement for children/youth and their families in a way that is not possible with the CSHCN and COE4CCN approaches. Thus, use of the PICM-CAG even in children/youth defined using these two studied approaches, will likely bring value in terms of opportunities for intervention and outcome change.

A Case Example: Lokandra

Lokandra would be considered complex according to the definitions of both CSHCN and COE4CCN. As described previously, however, the PICM program allows physicians and PICM managers participating in her care to move beyond these definitions to actionable steps for improving health. As we discuss the interactions between medical illness, psychological conditions, social stressors and health-system barriers, we can draw upon Lokandra to illustrate the value that an instrument, such as the PICM-CAG, can contribute for thinking about how to approach the risk factors creating health complexity in this 16-year-old girl. Her case illustrates the importance of interactions among multiple factors affecting health in children/youth.

Lokandra is a 16-year-old African-American girl with a history of posttraumatic stress disorder (PTSD) due to severe physical abuse and neglect by her biological mother, major depression, obesity, anemia due to uterine fibroids, and likely obstructive sleep apnea (OSA) due to large tonsils and obesity. Lokandra receives primary care and BH treatment at a community health center across town from where she lives. Her primary care provider and psychiatrist communicate regularly and share an electronic medical record, but there are delays in communication among providers at the community health center, outside therapists, and medical specialty physicians.

Approximately 1 year ago, Lokandra's maternal grandmother was given physical and legal custody of Lokandra. At that time, her pediatrician referred Lokandra for mental health services when Lokandra's grandmother was "fed up" with Lokandra's oppositional behavior, particularly as she talked back to her grandmother and was doing poorly in school. Lokandra's grandmother was considering having her returned to the custody of child protective services (CPS).

Following mental health referral, Lokandra's psychological and behavioral issues continued to escalate. She presented to the emergency department four times in 3 months and was admitted to a psychiatric hospital twice due to suicidal thoughts. On one occasion, it took 10 days residence in the emergency department before a bed in a psychiatric inpatient facility became available. Lokandra was insured by the state Medicaid program, for which she qualified based on the family's income.

Lokandra was in 11th grade, but she was failing several classes. She arrived at school late and often did not complete her homework. She had few friends or social outlets, and she was continually arguing with family members. Ultimately, Lokandra's grandmother felt overwhelmed in caring for her, and Lokandra was returned to the custody of CPS.

Legal and physical custody was then transferred back to Lokandra's biological mother. Lokandra did not communicate with her grandmother after her grandmother relinquished custody. Both Lokandra's grandmother and her biological mother have mental health and physical health problems of their own. Further, both received minimal support from family members and neighbors for childcare.

When living with her biological mother, Lokandra missed several mental health and primary care appointments. This was due, in part, to difficulty in navigating a complicated series of bus transfers (three separate buses) to reach Lokandra's health center from her mother's address and, in part, to distrust of the medical providers who were involved when Lokandra lived with her grandmother. Lokandra and her family had not continued to engage in individual or family therapy services since moving away from her grandmother's. Lokandra also stopped taking her psychiatric medications. On the physical health side, Lokandra did not attend her sleep study, which had been scheduled to evaluate her for OSA. She continued to experience persistent anemia, presumably due to untreated uterine fibroids.

Lokandra was referred to the PICM program by her pediatrician and BH providers due to multiple non-improving physical and BH issues; the family's difficulty in assuring care continuity, e.g., appointment attendance and medication adherence; poor school performance; and poor social functioning.

The Interaction Between Physical and Behavioral Health Conditions in Children/Youth

As demonstrated by Lokandra, general medical and BH symptoms/conditions in children/youth may interact and synergistically contribute to increased health complexity (Table 3.5). Common ways in which this occurs fall into several categories, including:

- Psychosomatic conditions
- Co-occurring conditions
- Psychological factors exacerbating physical conditions
- Physical conditions or their treatment causing/exacerbating psychological conditions
- Psychological adverse events leading to physical problems

Table 3.5 The medical and psychological interaction

Types of interaction	Example
Psychosomatic	Functional abdominal pain
Co-occurring medical & BH conditions	Asthma and anxiety
Psychological factors exacerbating medical illness	Depression with diabetes mellitus
Physical conditions/treatments causing/exacerbating BH conditions	Cancer leading to depression
Psychological event: chronic illness association	Adverse childhood events associated with chronic illness in adulthood

Regardless of the type of connection that physical and psychological symptoms/conditions have, unless both are systematically addressed in the children/youth experiencing them, concurrent illness can persist, health complications related to base illnesses increase, developmental and school performance suffer, and use of health services escalate.

Psychosomatic symptoms, defined as physical symptoms with a psychological origin, are common in children/youth. Anxiety in children/youth often presents with headaches and stomachaches, potentially interfering with their ability to attend school or participate in age-appropriate social activities. Functional abdominal pain, a cluster of painful bowel conditions in which no general medical etiology is identified, affects an estimated 8 % of children/youth and may contribute to significant healthcare costs due to diagnostic tests and interventions [24]. Ineffective coping skills and stress have been associated with functional abdominal pain in children/youth [24, 25]. Since these children/youth may respond to psychological therapy and/or antidepressant medications for this and other psychosomatic conditions, it is important to make the link between the physical presentations and the underlying psychological distress.

As with adults, general medical and psychological conditions commonly co-occur. BH conditions associated with physical comorbidities in children/youth include depression, anxiety, oppositional defiant disorder (ODD) and conduct disorder [26]. In a study of high-risk children/youth receiving services in the public sector, a diagnosis of mood disorder was significantly associated with respiratory and infectious diseases, whereas ODD and conduct disorder were associated with adverse health effects due to risk-taking behaviors such as substance abuse [26]. This study and others have noted significant associations between anxiety disorders and respiratory conditions, such as asthma in children/youth [26, 27]. As with adults, these correlations may be related to potentially synergistic and bidirectional alterations in immune function caused by either physical or psychological conditions, common environmental factors contributing to the pathogenesis of both conditions, and/or other unknown factors [28].

Psychological issues can exacerbate acute or chronic general medical conditions. As adolescents with type-I diabetes mellitus embark on the normal developmental tasks of gaining independence and autonomy, some reject their routines for medically managing their blood sugar and present with poor glycemic control. Similarly, adolescents with diabetes and eating disorders may attempt to control their weight by neglecting insulin management. Depression in adolescence has also been associated with elevated hemoglobin A1c, possibly due to poor medication adherence [29, 30]. Alternatively, psychological maturity in adolescence, defined as showing self-reliance and self-control, is associated with improved metabolic control [31].

General medical conditions can also lead to psychological problems. Immune mediators in cancer, as well as oncology treatment itself, have been associated with mental health problems in children [32, 33]. Although children generally demonstrate remarkable resiliency, having a chronic illness, such as diabetes or sickle cell anemia, requires frequent medical appointments and is associated with painful experiences and procedures. These may affect a child's development due to stress and real or perceived social isolation. Thus, children with chronic medical conditions may have psychological vulnerability, potentially increasing the risk of mental health problems.

Finally, early psychological experiences have a known association to the development of general medical conditions. In the landmark study about Adverse Childhood Events (ACEs), a direct correlation was found between trauma in childhood and physical illness in adulthood [34]. Adverse childhood events were categorized as: (1) exposure to psychological, physical, or sexual abuse; (2) violence against a child/youth's mother; and/or (3) living in a household where inhabitants were substance abusers, had mental illness or suicidal thinking, or had ever been imprisoned [34]. There was a significant linear association between the number of ACEs experienced and common chronic illnesses in adulthood including cancer, heart disease, and type-2 diabetes mellitus [34].

The authors and others [34, 35] have posited that early childhood trauma leads to psychological stress and unhealthy coping methods, such as substance abuse and risk-taking behaviors [36], resulting in poor health. However, other studies have found that mental health conditions and potential subsequent unhealthy behaviors do not explain correlations between early-life trauma and chronic health conditions in adulthood, suggesting a direct correlation between early-life trauma and chronic health conditions in adulthood [37, 38]. It is possible that neurochemical factors associated with chronic stress negatively impact end-organ function [39, 40], but research into these potential causal mechanisms is ongoing.

Sickness Behavior

In both children and adults, "sickness behavior" describes the ways in which individuals interpret and respond to physical sensations. Pain, for example, is a physical symptom that usually indicates a current or impending problem requiring attention. However, individuals' cognitive responses to pain vary significantly. At the extremes, some may ignore pain even to the point of avoiding important medical interventions, whereas others may interpret minor physical discomfort as a sign of serious illness [24].

The consequences that occur when an individual views pain as dangerous include seeking medical attention, taking time away from regular tasks, and gaining attention from others. Problems also arise when individuals experience chronic pain that is not amenable to medical treatment, as they may continue to seek medical attention and relief from their condition(s). This can lead to unnecessary procedures and medical treatments, increasing healthcare costs and time away from school and social engagements.

By interacting with the child/youth in ways that do not promote improved functionality, families can exacerbate disability due to sickness behavior and may advocate for and support expensive, yet unnecessary, medical procedures. In these cases, psychological treatments to reframe the child/youth and family's cognitive and behavioral responses to a child's physical sensations may significantly alter health preoccupation and reduce healthcare service use.

Social Determinants of Health

There are several social factors, such as income, education, and race/ethnicity that have been shown to impact individual and population health (Table 3.6). Poor health has been associated with such factors as poverty, limited healthcare insurance, psychosocial stress, poor access to providers, neighborhood effects, and poor social cohesion. Research into causal links between environment and health, as well as potential interactions between the individual social determinants, is ongoing.

Children living in low-income families are less likely than children living in high-income families to be insured [41]. Compared to higher-income and insured children, lower-income and uninsured children have lower healthcare utilization and expenditures, are less likely to have a usual source of healthcare, and are more likely to access health assistance through the Emergency Department [41–43]. Insurance type and status directly impacts access to physical and mental healthcare [44–46], as the type and scope of health treatment a child can receive is often determined by the provider network and payment by insurance carriers. According to studies using data from the Medical Expenditure Panel Survey (MEPS) and the Healthcare Cost and Utilization Project (HCUP), during the period from 2000 to 2009, the percentage of uninsured children decreased. There was a simultaneous increase in the use of healthcare for this population [43]. Since appropriate healthcare utilization may contribute to improved health outcomes, children's insurance status may directly impact their health.

Table 3.6 Selected list of social determinants of health in youth

- Income
- Education/health literacy
- Race/ethnicity
- Neighborhood
- Social cohesion and capital

Being insured, however, is only part of the story. For BH care, even insured children/youth of families with lower incomes may have access to fewer BH providers. A high percentage of BH providers do not participate in insurance company provider networks due to hassle and low payment issues [47]. This reaches nearly 50 % for Medicaid products [48] that are the insurance vehicle through which most high-need children are covered (Fig. 2.4). As described in Chapter 2, however, fewer than 20 % of pediatricians opt out of Medicaid. This means that out-of-pocket expenses, for BH care in particular, make it an impossible option for children/youth with families on limited budgets.

Education has a significant positive impact on health: (1) directly due to improved health literacy and lifestyle factors and (2) indirectly as a marker of income, self-sufficiency, and/or access to resources. Higher level of household education has been associated with breastfeeding during infancy [49], lower rates of asthma [50], decreased obesity [51], and lower rates of substance abuse [52]. Children of parents who have graduated from high school are more likely to graduate themselves, possibly contributing to improved personal health outcomes in adulthood.

Compared to individuals of Caucasian descent, at all socioeconomic levels, those from African-American heritage have lower life expectancy, earlier onset of disease, more severe disease, and increased rates of adverse obstetric outcomes [53, 54]. Minority children have lower healthcare utilization, in part, due to a lower proportion having healthcare insurance [42]. However, when insured, minority children are more likely to receive public insurance, and these children also have lower healthcare utilization compared to non-minority children with public insurance [42]. Although the associations between race/ethnicity and decreased healthcare use are well-established, the etiological pathways are complex and likely diverse.

Neighborhoods also may have a significant impact on health. Availability of healthy food and the ability to walk and exercise depend on the structure and safety of neighborhoods [55]. Community resources, including afterschool programs and health services, depend on the geographical location in which children live. Transportation, particularly for families that do not have access to personal automobiles, such as Lokandra, can be a significant factor influencing receipt of healthcare services for children. Finally, family stress and BH may be influenced by housing and neighborhood effects, such as community violence [56], directly impacting the mental and physical health of children/youth.

Social capital can be defined by social cohesion, i.e., social capital is the availability of resources to members of closely related communities and/or by social networks that depend on individuals' connections with others [57]. Social capital has been shown to influence individual mortality, as well as health outcomes related to children/youth with behavior issues, education, occupational productivity, public health, and others [57]. Social capital is thought to influence health through shared information on health-related topics, social influence on health-related behavioral norms, relay of access to local health-related services, and positive psychological effects of increased social support [57]. For example, communities with high social capital may have improved health outcomes due to the collective impact of individuals sharing information about health issues and local resources, as well as providing social support to ease isolation and distress.

There are many social and political factors that may influence health. As discussed above, the child/youth's social context has a significant impact on his/her ability to receive and engage in health services. Traditionally, the healthcare system focuses narrowly on clinical aspects of disease and treatment, but for many children/youth and families, non-clinical aspects may influence health to a greater extent. For example, children/youth with asthma who are living in substandard housing may have greater exposure to asthma triggers, resulting in more frequent exacerbations, complex medication regimens, and hospitalizations. By addressing the substandard housing, the treatment regimens for these children/youth may be simplified, resulting in improved overall health and decreased healthcare expenditures.

Illness Interactions and Social Context for Lokandra

Lokandra's medical and psychological conditions were intertwined, requiring a dual and comprehensive approach to both. She had multiple medical conditions, including obesity, likely OSA, and anemia presumably due to uterine fibroids. She also had multiple BH conditions including PTSD and major depression. Her medical conditions may have caused fatigue exacerbating social withdrawal and depression. Similarly, her BH conditions and their treatment may have exacerbated her obesity. Finally, given the research on ACEs described previously, based on Lokandra's history of severe abuse and neglect, she was at significant increased risk for chronic medical conditions in adulthood. Lokandra has had high utilization of the healthcare system with multiple episodes of inpatient psychiatric treatment, emergency department visits, outpatient care, and diagnostic tests and procedures to treat her physical and BH conditions.

Lokandra had multiple "non-clinical" barriers to health improvement as well. Her family had limited financial resources, she was enrolled in public insurance, she was a member of a racial minority, her family used public transportation, and her family and neighborhood exhibited poor social cohesion. Each of these social determinants put Lokandra at increased risk of problems in accessing care and for poor health outcomes. Lokandra was at the developmental stage of gaining independence, yet she remained dependent on her caregivers who demonstrated limited capacity to provide needed support. In addition to her physical and BH complexity, these social and health-system barriers also needed to be addressed for her to achieve health improvement.

It is no wonder that Lokandra's physical health conditions went undiagnosed and untreated for over a year and she made little progress related to weight loss. When she remained connected to her mental health and primary care providers, her symptoms improved, but the course was tenuous and easily disrupted by ongoing stressors and frequent non-attendance.

An Introduction to Addressing Health Complexity in Children/Youth

Several clinical service models, including the PCMH and the Chronic Care Model (CCM), have been developed to address the needs of children/youth with health complexity [6, 7, 58]. Each of these models focuses on family-centeredness and care coordination to support the multiple needs of families presenting with health complexity. Medical service integration has shown moderate success in improving health outcomes and reducing medical expenditures for CSHCN [59, 60]. The pediatric PCMH also has demonstrated success in improving child functional outcomes and family coping [61]. As a result, the Maternal and Child Health Bureau and the American Academy of Pediatrics have endorsed the implementation of the PCMH for all children/youth [58].

The pediatric ICM program, given its consideration of issues associated with the biological, psychological, social, healthcare and family/caregiver systems that may influence a child/youth's health, provides a framework for case management that can be incorporated into the PCMH and CCM for children/youth with health complexity. As will be described in Chapter 5, during the initial evaluation by the PICM manager, information is systematically obtained on the current and past history of physical and behavioral health symptoms with which children/youth present, as well as on social support, academic progress and access to healthcare. These items receive a hierarchical score with increasing "anchored" points identifying issues for which prioritized attention should be given. An analysis of caregivers' health status and social support is also included in the PICM evaluation, and in some situations, caregivers may be assigned an adult ICM manager if their needs are more complex than can be managed by the child/youth's PICM manager alone. The primary responsibility of the PICM manager is to the child/youth, though assisting the parent/caregiver may facilitate more rapid return to health stability.

Many of the items with high scores are interrelated, and interacting items can contribute to health complexity. These connections are incorporated into goal setting and actions performed to achieve objectives as a part of prioritized care plans. Families and PICM managers may find that as particular items resolve, other items may improve as well because the interactive component has been removed.

Biological, psychological, social, and health-system problems are treated with equal importance, recognizing that any of these factors can represent a significant barrier to health. For instance, if the child/youth's family does not have stable housing (a non-clinical barrier), it makes it unlikely that prescriptions will be filled or appointments kept. In these situations, the "social" situation is addressed first; anticipating that adherence to treatment recommendations will improve as safe housing is found.

Children/youth with chronic physical illness and developmental disorders may need special support and accommodations to function at school, home and in their communities, such as health aides; individualized education plans; and intensive occupational, physical and/or behavioral therapies. Without such support, children/

youth may not have the opportunity to achieve academically and socially at the same pace or level as their typically developing peers. Time away from school and social activities due to medical appointments may negatively impact progress, and thus these children/youth may need special assistance to achieve developmental milestones.

Similarly, children/youth with cognitive and BH conditions may have reduced ability to participate in academic and community programming. Children/youth with school refusal due to anxiety, learning disability and/or substance abuse often present a clinical conundrum, specifically to determine the appropriate support and external motivation required to promote academic achievement. This is particularly challenging when caregivers feel overwhelmed and incapable of reinforcing age-appropriate engagement in school and social activities. Often these complexities result in children/youth missing weeks or even months of school, which may have a significant negative impact on their development. Children/youth who act out or demonstrate delinquent behavior due to BH conditions also represent a group that is at risk for poor academic achievement and impaired function as adults.

A Return to Lokandra

Lokandra provides a good example of how the PICM care process works from the initial interview to graduation. We will now use it to discuss challenges and important considerations when evaluating and engaging families in the PICM process.

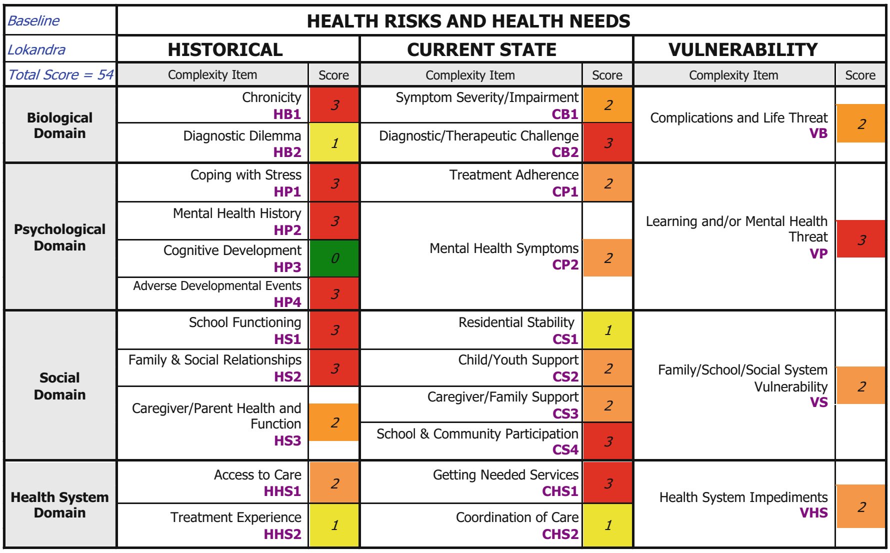
Initial PICM Evaluation and Completion of the PICM-CAG

Lisa, the PICM manager assigned to Lokandra spent 45 min with Lokandra and her mother together, and another 15 min each with Lokandra and her mother individually on the day she was referred. Lokandra's practitioners told Lisa about the problems with missing appointments so she made a special effort to find a place in her day for the assessment. At the completion of Lisa's face-to-face interviews, it was possible to anchor Lokandra's PICM-CAG at a total score of 54 (Table 3.7). Anything over 40 would be considered high.

Red and orange scores, representing complexity items with a higher need for early intervention, predominate. Those that can be linked, as discussed above, should be. Individual highly anchored items, however, without connection to other items will also drive a prioritized care plan. While Lokandra has health complexity as noted by the total score, it is possible to establish where to begin by looking at individual item scores and their connections.

A week after Lisa completed the PICM-CAG; she shared it with Lokandra and her mom at a home visit. This allowed her to: (1) explain the role she could play in assisting Lokandra and her mom with challenges that they faced in helping Lokandra get better, (2) confirm that she correctly scored PICM-CAG items, (3)

Table 3.7 Lokandra's pediatric integrated case management-complexity assessment grid



Baseline	HEALTH RISKS AND HEALTH NEEDS					
Lokandra	**HISTORICAL**		**CURRENT STATE**		**VULNERABILITY**	
Total Score = 54	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity **HB1**	*3*	Symptom Severity/Impairment **CB1**	*2*	Complications and Life Threat **VB**	*2*
	Diagnostic Dilemma **HB2**	*1*	Diagnostic/Therapeutic Challenge **CB2**	*3*		
Psychological Domain	Coping with Stress **HP1**	*3*	Treatment Adherence **CP1**	*2*	Learning and/or Mental Health Threat **VP**	*3*
	Mental Health History **HP2**	*3*	Mental Health Symptoms **CP2**	*2*		
	Cognitive Development **HP3**	*0*				
	Adverse Developmental Events **HP4**	*3*				
Social Domain	School Functioning **HS1**	*3*	Residential Stability **CS1**	*1*	Family/School/Social System Vulnerability **VS**	*2*
	Family & Social Relationships **HS2**	*3*	Child/Youth Support **CS2**	*2*		
	Caregiver/Parent Health and Function **HS3**	*2*	Caregiver/Family Support **CS3**	*2*		
			School & Community Participation **CS4**	*3*		
Health System Domain	Access to Care **HHS1**	*2*	Getting Needed Services **CHS1**	*3*	Health System Impediments **VHS**	*2*
	Treatment Experience **HHS2**	*1*	Coordination of Care **CHS2**	*1*		

collaboratively initiate the care plan with Lokandra and her mom, and (4) answer additional questions. She indicated that she would be working with them and Lokandra's clinicians until Lokandra's situation stabilized. Lokandra and her mother were willing to give it a try but were skeptical since practitioners and the health system had abandoned them so many times in the past.

Care Plan Based on PICM-CAG Complexity Items

Lokandra's PICM-CAG scores informed the way that her care plan was developed (first three columns of Table 3.8). The care plan itself includes individual and collective barrier identification (Table 3.8, column 1), assistance goals (Table 3.8, column 2), and the actions needed to achieve them (Table 3.8, column 3). The numerous BH emergency room visits and inpatient hospitalizations had precipitated Lokandra's entry into PICM, thus, Lisa knew that BH issues had to be high on the assist and support agenda. These were also contributing to poor engagement of Lokandra and her mother in addressing her physical health problems.

For Lokandra, there were a number of immediate "health" risks that needed attention, but her personal future was also in jeopardy. She was at a formative point in her adolescent development. Unless help arrived, she was at risk of not graduating from high school, living with poorly developed interpersonal skills, and using non-productive problem solving to address her future life problems. Lisa added school issues and social skills development to her initial care plan.

Table 3.8 Lokandra's care plan with initial outcomes

CAG items (Lokandra's)	Goals	Actions	Outcomes (at 2 months)
Barrier HP1, HP2, HP4, HS2, CP1, CP2, CS2, CS3, CHS1	Stabilized BH symptoms	1. Transportation and childcare assistance to mother 2. Define BH symptoms; discuss family issues & relationships 3. Assist with focused BH provider intervention 4. BH crisis plan 5. Develop community supports 6. Identify positive mother–daughter activities 7. Record targeted BH outcomes	1. Therapy and medication adherence 2. Less aggression and suicidal thinking 3. Maternal/daughter coexistence 4. No ER visits or hospitalizations
Barrier CB1, CB2, HHS1, CHS1	Improved energy, decreased fatigue	1. Assist in finding providers 2. Transportation & childcare assistance 3. Anemia (a) Complete GYN exam (b) Appropriate intervention 4. OSA (a) Sleep study completion (b) Appropriate treatment 5. Obesity (a) Discuss enjoyable exercise (b) Discuss eating habits	1. Connected PCP & specialists found 2. Bus passes and childcare support for mother 3. Anemia—fibroids removed 4. OSA—tonsillectomy scheduled 5. Obesity—joined Zumba exercises
Barrier HS1, HS2, CS4	High school graduation	1. Identify and address reasons for tardiness and absences 2. Support mother in requesting and completing individualized educational program (IEP) evaluation 3. Support plan for make-up work; assure follow-up through 4. Assist with social skills development	1. IEP support 2. Improved grades & performance 3. Summer school enrollment 4. Joined Zumba with a new friend

Care Plan Outcomes

Lisa recorded outcomes of her interaction with Lokandra and her mother on the Care Plan Outcome (CPO) template used with PICM (Table 3.8*—essentially adds a fourth column to the care plan). After 2 months, Lokandra and her mother were forming a meaningful working relationship for the first time through the indirect assistance of Lisa. Lisa was not involved in setting up the Individualized Educational Program (IEP), performing any of the therapies, or participating in community-based activities; nonetheless, without Lisa, Lokandra and her mother would have had great difficulty in getting things started and following through. Lisa used her clinical expertise and experience to guide her care plan course of action with and on behalf of the family.*

Lisa first helped Lokandra and her mother identify barriers to accessing care, including transportation and finding childcare for Lokandra's siblings. Lisa provided educational materials to Lokandra and her mother about Lokandra's medical and BH conditions and helped them schedule diagnostic and therapeutic appointments. Together they addressed these and other barriers. As a result, Lokandra was able to attend most medical and BH appointments. Lisa also encouraged Lokandra and her mom to identify and start doing some enjoyable things together.

With Lisa's help, Lokandra's mother requested an evaluation for an IEP through Lokandra's school. Through it, Lokandra received increased academic and behavioral support at school. She also was signed up for summer school to address the losses and delays accumulated during her junior year.

Lisa was a listening ear for Lokandra and her mother who discussed concerns about Lokandra's psychiatric medications and treatment providers. She was able to help with provider communication. Lokandra's medication regimen was simplified and she became adherent to therapy appointments. By the end of the second month, Lokandra joined a gym. She identified exercise classes, like Zumba, that she enjoyed attending.

Patient-Centered ICM Performance (PCIP)

It is important to consider clinical and patient-centered outcome measures to track progress for individuals enrolled in PICM. As discussed in previous chapters, patients who are not getting better may require changes in their care plans, including changes in approaches to treatment by their practitioners, before they demonstrate improvements in meaningful outcome measures. Documentation of health-related clinical, functional, satisfaction, quality of life, and fiscal outcomes ultimately leads to program support and sustainability. This starts with the personal goals of the child/youth and family.

Clinical outcomes depend on the child/youth's medical and BH conditions, and evaluation and tracking of clinical outcomes are supported by laboratory data, objective measures, and validated rating scales. Given the PICM manager's expertise, clinical outcomes are often identified by the PICM manager working in conjunction with the child/youths' treatment team and the PICM Medical Director. Still, it is important for the PICM manager to describe and engage the child/youth and the family to understand and support clinical measures and their outcomes.

Functional outcome measures for youth with physical disabilities and/or debilitating medical conditions may include the physical repair and improvement in use of previously affected physiological systems. For example, with mechanical assist devices and physical therapy, a child/youth with cerebral palsy may gain the ability to walk independently while proper percussion and drainage may improve lung capacity in a child/youth with cystic fibrosis. Monitoring and reporting progress in these functional outcome measures would be important for individual and population health improvement.

Functional outcome measures for youth primarily affected by behavioral health conditions, as opposed to physical health conditions, may differ. For example, educational attainment, social engagement, and positive family relationships may be compromised in youth with behavioral health conditions, and these factors may significantly impact productivity and health in adulthood. Given these links between a youth's ability to function in traditionally non-clinical settings and the impact on long-term health, such functional outcomes deserve attention within the healthcare system as well. Reliance on meaningful outcome measures to track progress in the multiple domains that influence health—not only the physical or mental health domains—is a core expectation of PICM programs and guides treatment and program planning.

At the end of the discussion that Lisa had with Lokandra and her mother about Lokandra's health situation on her initial interview, she asked them to share something measurable that they would like to have improved about Lokandra's health and what they would like Lokandra to be doing that she isn't doing currently. Lokandra's goals were somewhat different than her mother's.

Lokandra's functional goal was to spend more time with friends, and her clinical goal was to have more energy. Her mother's functional goal was for Lokandra to make better grades, and her clinical goal was for Lokandra to be less argumentative. Lokandra was on board with her mother's former goal but didn't know if the latter goal would be possible. She and her mother were almost always arguing. Lisa worked with Lokandra and her mother to translate their personal aspirations into measureable goals (top 4 measures in Table 3.9*). In addition to the personal clinical and functional goals, Lokandra and her mother shared their satisfaction with the healthcare Lokandra was receiving, and Lokandra indicated how many days she was happy with life (quality of life).*

Lisa filled in a number of clinical and functional goals of her own along with the initial PICM-CAG score and an economic measure of success. Baseline measures were identified for each of the desired health outcomes (Table 3.9). Lisa knew that any of the measures might need changing during PICM but this was where Lokandra and her mother agreed to start.

Table 3.9 Lokandra's patient-centered ICM performance

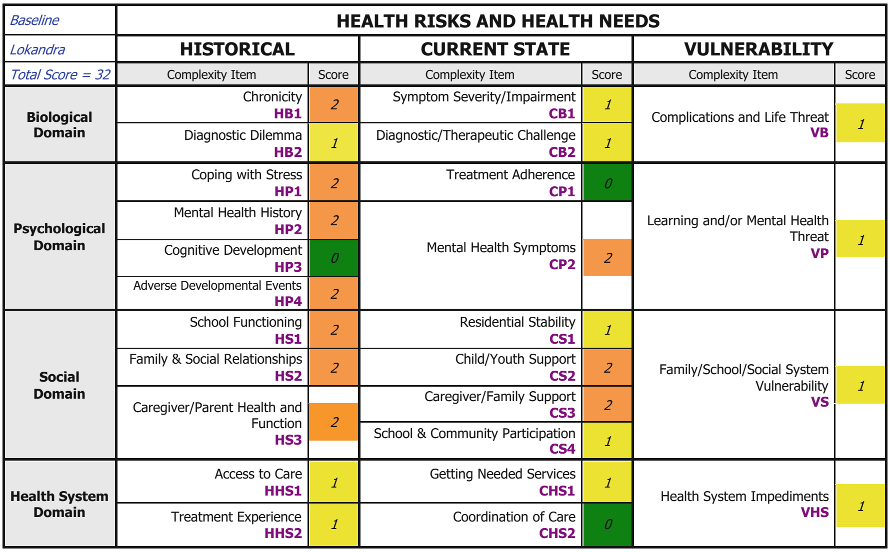
Measure	Baseline	Follow-up assessments		
Time period	Initial	2-Months	4 Months	6 Months
Lokandra's clinical goal (days/month at all classes on time)	8/22	14/23		
Mother's clinical goal (days/week no arguments)	0	2		
Lokandra's functional goal (out with friends/week)	0	3		
Mother's functional goal (days/week completed homework)	0	2		
Health-related quality of life (days/week happy with life)	0	1		
Family satisfaction (Lokandra and mother—VAS)	5/10	8/10		
ICM-CAG score	54	43		
Clinical measure (PHQ-9 score)	23	18		
Clinical measure (hematocrit)	26	32		
Functional measure (missed appointments/month)	7	4		
Economic measure (ER visits/month)	3	1		

Progress toward goals was assessed on a follow-up Patient-Centered ICM Performance template (PCIP) at the second month, and would be again at intervals until Lokandra reached graduation from PICM (Table 3.9). Care plan outcomes also showed that concrete progress related to Lokandra's immediate needs was being made by 2 months (Table 3.8). The CPO demonstrated actions taken to overcome barriers, whereas the PCIP documented the effect that tackling care plan barriers was having on Lokandra's life.

Lokandra's and her mother's personal clinical outcomes included objective findings related to both her physical and BH conditions. For instance, the number of times tardy or absent from class reflected Lokandra's level of fatigue. Arguments with her mother indicated the degree to which progress was being made with her depression and oppositional behavior. Personal functional goals helped Lokandra work on socialization skills as well as school performance. Since Lokandra and her mother had picked these as goals, they served to engage Lokandra in the PICM process. Of course, in order for Lokandra to get more energy so that she could study and socialize, her physical and behavioral conditions needed stabilization, such as better sleep and no anemia. Thus, Lisa's goals became intermediate steps for Lokandra to achieve her desired personal goals.

While PICM largely takes place independent of the clinicians caring for Lokandra, they can have a great impact on the speed and success of the assistance process. Clinicians diagnose and treat physical and BH conditions; thus, their understanding of and potential input into the care plan can be very helpful.

Table 3.10 Lokandra’s follow-up PICM-CAG at 9 months



Baseline	HEALTH RISKS AND HEALTH NEEDS					
Lokandra	HISTORICAL		CURRENT STATE		VULNERABILITY	
Total Score = 32	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity **HB1**	*2*	Symptom Severity/Impairment **CB1**	*1*	Complications and Life Threat **VB**	*1*
	Diagnostic Dilemma **HB2**	*1*	Diagnostic/Therapeutic Challenge **CB2**	*1*		
Psychological Domain	Coping with Stress **HP1**	*2*	Treatment Adherence **CP1**	*0*	Learning and/or Mental Health Threat **VP**	*1*
	Mental Health History **HP2**	*2*	Mental Health Symptoms **CP2**	*2*		
	Cognitive Development **HP3**	*0*				
	Adverse Developmental Events **HP4**	*2*				
Social Domain	School Functioning **HS1**	*2*	Residential Stability **CS1**	*1*	Family/School/Social System Vulnerability **VS**	*1*
	Family & Social Relationships **HS2**	*2*	Child/Youth Support **CS2**	*2*		
	Caregiver/Parent Health and Function **HS3**	*2*	Caregiver/Family Support **CS3**	*2*		
			School & Community Participation **CS4**	*1*		
Health System Domain	Access to Care **HHS1**	*1*	Getting Needed Services **CHS1**	*1*	Health System Impediments **VHS**	*1*
	Treatment Experience **HHS2**	*1*	Coordination of Care **CHS2**	*0*		

Further, as actions are taken by or on behalf of Lokandra, Lokandra’s clinicians can guide next steps when progress slows or the clinical situation changes. It is truly a team effort among Lokandra, her mother, the PICM manager, and Lokandra’s practitioners. The CPO and PCIP merely record progress and when graduation can be anticipated.

There were setbacks in the course of involvement with PICM, demonstrated at the reevaluation periods on the PCIP. At those times, Lokandra’s PICM manager worked with the family and her Medical Director to identify and develop additional plans to overcome new or changed barriers. Ultimately, follow-up PICM-CAGs provide an indication about when graduation might be considered (Table 3.10). Nine months after starting PICM, life wasn’t perfect for Lokandra and her mother, but they had found a way to interact in peaceful coexistence. Lokandra’s physical problems have been dealt with. She was in therapy and on an antidepressant. Suicidal thoughts were gone and ER visits and hospitalizations were a distant memory. With increased support at school, and after addressing her fatigue and transportation issues that were contributing poor school attendance, she was on her way toward graduation. Finally, Lokandra and her mother had a stronger relationship, and with security in her living situation, Lokandra was able to plan for increased independence in the next 1–2 years. Lokandra benefited from PICM to coordinate medical care for her physical and behavioral healthcare and to address the multiple social and health-system challenges that impacted her health.

Family and Community Engagement

As demonstrated by Lokandra's case, PICM managers need to be creative in accessing support for families. Treating clinicians often cannot address traditionally nonclinical factors affecting their patients' health, given time and financial constraints in the current payment environment. While treating clinicians and PICM Medical Directors may be particularly helpful in guiding PICM managers on how to assist families with needs in the biological and psychological domains, PICM managers should be expert in accessing social, community, and academic support for children/youth.

Such resources available to individual patients are likely to differ depending on the community in which the family lives. PICM managers should be facile in identifying and helping families apply for indicated entitlements based on the family's financial hardship and/or the child/youth's disability. Finally, overcoming barriers in receiving healthcare services, including obtaining insurance and facilitating transportation, are within the scope of PICM managers' practice. They work closely with families over time to address such barriers as they arise.

The ways in which PICM managers work with families and children/youth depend on the cognitive and developmental capacity of the child. For young children and any child/youth who is cognitively or developmentally impaired, PICM managers work mostly with caregivers. However, for typically developing older adolescents, the focus may be more with the youth her/himself while addressing issues related to gaining independence to manage health issues and ensuring adequate medical and social support during the transition to adulthood. The presentation of and methods for addressing health complexity will differ depending on the developmental stage of the child/youth. PICM case managers and Medical Directors will work together to identify the most appropriate levels of child/youth involvement depending on the clinical presentation.

Conclusion

There are multiple domains that act independently and in concert to influence the health of children/youth. Children/youth with multiple factors in each domain and/or in multiple domains are likely to present with increased health complexity resulting in poor health outcomes and increased cost. Addressing these issues in a holistic manner, with a focus on relationship and continued joint effort, may reverse these potential negative outcomes.

By simultaneously addressing the clinical, social, and health-system barriers to health improvement for vulnerable populations, there is significant potential to reduce reliance on high-cost treatments. Interestingly, lower-cost- and community-based care may result in better health outcomes for children/youth compared to treatment in high-cost environments, such as inpatient units and the Emergency

Department. Treatment for chronic medical and BH conditions in children/youth necessarily requires long-term continuous relationships with providers. This type of care is best delivered in an outpatient community setting as opposed to the fragmentation that often occurs when children/youth transition between levels of care. PICM managers have the expertise and ability to help maintain children/youth in these lower-cost and higher-quality treatment settings.

Physicians, working together with families and PICM managers, may improve their ability to influence the health of their patients. In our current clinical and payment environments, the clinical expertise of physicians is emphasized at the expense of other social and health-system factors. For example, when physicians are provided little time to evaluate and treat each individual patient, realistically they can only address the clinical aspects of care. However, given that the social and health-system barriers often influence health to a greater extent than clinical aspects, patients are unlikely to improve when these "non-clinical" barriers are ignored. By working with a team of providers—each contributing their particular expertise—the health of patients may be improved at lower cost.

Finally, technology, such as through telemedicine, may decrease physicians' reliance on in-person visits with patients. Particularly for chronic conditions, technology may allow for more frequent and shorter interactions with patients, supporting providers' ability to follow their conditions closely and readily identify the onset of clinical deterioration. Identifying problems and intervening at an earlier stage may maintain patients in the community without the need for higher levels of care. Again, for these frequent interactions and interventions with patients to be effective, physicians will need to work with a team of providers, including case managers, to address the multiple factors that may lead to clinical deterioration. Technology may support improved quality of care at lower cost, particularly for treatment of chronic conditions, but only if physicians are able to work as part of a team.

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Chapter 4
The Organizational and Operational Setup of Adult Integrated Complex Case Management

> *An approximate answer to the right question is worth a good deal more than an exact answer to an approximate question.*
>
> – Paraphrased quote attributed to J. W. Tukey (1915–2000)

Chapter Objectives

- *To describe organizational program-based requirements for effective and efficient ICM delivery.*
- *To understand how to choose and train ICM managers so that ICM manager skills maximize value to patients, providers, and the health system.*
- *To summarize components of the Integrated Case Management-Complexity Assessment Grid (ICM-CAG) and its value in disentangling health complexity—"the comprehensive complexity assessment".*
- *To show how ICM managers connect ICM-CAG findings to the assistance they give to patients with health complexity.*
- *To demonstrate how ICM managers measure clinical, functional, satisfaction, quality of life, and cost outcomes and graduate patients back to physician-only "standard care".*

If physicians had an infinite amount of time and were supported by unlimited resources, then they would be able to address the needs of complex patients in their practices without the augmenting services of case managers. This is not the world in which we live. Even case managers are costly but, presuming that they use "value-added" case management assistance techniques, with support by the clinical community and proper case management training, they can help alter outcomes in patients who flounder in the current system that we call "standard care."

The magic in achieving "measured health" outcome success (documented clinical, functional, economic, satisfaction, quality of life) through ICM is in connecting specific identified clinical *and non-clinical* barriers to improvement with the goals and actions that will reverse them, especially in patients with health complexity. By connecting barriers to goals and actions, desired outcomes can improve. In this Chapter, we will discuss how adult ICM programs are set up so that they have the greatest potential to bring value to patients and secondarily to the health stakehold-

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ers that sponsor them, whether health plans, employers, government agencies, Accountable Care Organizations (ACOs), or care delivery systems.

Organizational Aspects of Value-Added ICM-CAG-Based Integrated Case Management

"Integrated case management" is a generic term used throughout the healthcare industry. As a result, the term itself says little about what integrated case managers do or what leads to their impact on patient outcomes. For purposes of this book, *integrated complex case management, ICM, is a subset of case management in which the longitudinal application of biopsychosocial and health system assistance, characterized by education, clinical and non-clinical health facilitation, care coordination, patient navigation, promotion of "assist and treat to target," and patient advocacy, to collaborating patients and for their clinicians is given by licensed or case management certified and trained Level 3C and 4C but occasionally seasoned 2C health professionals (see Table 1.7). Its purpose is to disentangle, prioritize, and reverse barriers to improvement based on a linked comprehensive assessment; to stabilize health; and to reduce total healthcare costs until maximum benefit has occurred*. Ideally, once health stabilization has occurred and clinical, functional, satisfaction, quality of life, and cost outcomes have been recorded; preventive measures are instituted so that patient-guided self-management allows maintenance of gains after graduation from ICM and return to standard care.

Later in this chapter, we will review in detail the ICM-CAG complexity assessment process, its use in prioritizing case management goals and actions, actual case manager activities based on the ICM-CAG care plan, the process of moving patients to improved health, and the return to standard care (graduation). Before describing the work activities that typify ICM managers, however, we will analyze organizational environments in which ICM managers apply the ICM approach since they are as important as the application of ICM work processes themselves. These organizational factors influence patient outcomes and the success of the ICM program. Thus, we wish to set the stage for ICM practice by emphasizing the need for several important program-based features (Table 4.1).

Perhaps the first and most fundamental message is that ICM, especially when used for patients with health complexity, is not an add-on to an already well-defined job description. For ICM managers to apply outcome-changing work processes, they require dedicated, non-conflicted, time to pursue ICM with their assigned patients. Thus, it is not okay to add ICM to the duties of an already busy nurse or social worker in a multispecialty medicine clinic or to combine utilization management (UM) and ICM duties. ICM takes time and effort on the patient's behalf. To the extent that conflicting duties interfere, they need to be curtailed. This is particularly true when the conflicting activities would logically take precedence over ICM activities since they require time-sensitive action, such as putting a

Table 4.1 Organizational program-based features that add value to ICM

- A dedicated and focused ICM manager job description
- Longitudinal cross-platform ICM work processes
- Medical and BH assessment and assistance accountability without ICM manager handoffs
- ICM manager responsibility for clinical *and non-clinical* assessments and assistance
- Systematic ICM manager support and assistance from physicians in goal achievement and escalation of care
- A systematic method for prioritizing patients appropriate for ICM
- Creation of appropriate staff to patient ratios for ICM support

patient into an exam room or determining if a particular medication is among covered benefits. Although these procedures are important, they may ultimately be less valuable to the patient than intensive and integrated case management services.

Another important program feature is that ICM managers should be able to follow patients for their care needs as they pass from one to another delivery setting. This is a challenge for programs that are organized at a hospital or clinical level. Often in these programs, the primary duty of case managers is to maximize care delivered in the sponsoring setting. When a clinic-based case manager is following a patient who is admitted to the hospital, she/he relinquishes responsibility for the patient until the patient returns to the clinical setting. Conversely, a hospital-based case manager may assume responsibility for a patient during hospitalization but not after discharge. In ICM, these traditional case management location-specific work processes are replaced by cross-platform accountability for total health, function, and cost outcomes. Thus, the organizational structure of ICM manager responsibilities will include multiple locations of care as well as the challenges associated with care transitions. We call this the “longitudinal” component of ICM.

In today’s world the longitudinal component of ICM is difficult for non-connected hospital and clinical systems but easily achieved by independent case managers or those sponsored by health plans, government agencies, employers, and case management vendors. As we transition to ACOs during health reform, longitudinal ICM procedures will become much more possible and pertinent even at the hospital and clinic level since total health outcomes and cost will become an accountability. ICM was built to capture the improved health and cost outcome capabilities associated with a comprehensive, longitudinal approach and will be more easily fiscally supported at the system level of care.

Another organizational feature is that ICM managers should be able to address both medical and behavioral health issues as a part of a single ICM manager process. With ICM, ideally there are no handoffs from medical case managers to BH case managers, and vice versa. Assessment for medical and BH contributions to complexity are an inherent part of the multidomain ICM-CAG and resultant care plans. This is possible because ICM managers, whether they come from medical or BH backgrounds, are trained to address both medical and BH barriers to improvement. Since ICM managers do not “treat” patients but rather assist patients in following through on treatment provided by their physicians and other treating clinicians, ICM managers practice within the scope of their professional discipline. The resulting continuity with few handoffs allows ICM managers to capitalize on the advantages of an uninterrupted "personal" relationship with patients in the change process as they help with all of their multidisciplinary needs.

A critical feature of ICM managers is that they are accountable for non-clinical as well as clinical barriers to improvement. This enhances the benefit that they bring to patients and to the clinicians treating them because they understand and assist with the life circumstances (non-clinical barriers) that influence patients' ability to adhere to clinician-based treatment and to achieve health improvement. Clinicians correctly target improvement of the illnesses experienced by patients since this is what they spent years in training to do. They typically do not have the time to add non-clinical variable assessment and intervention due to patient volume and work schedules. As you will see, ICM manager work processes are designed to allow time to address these multiple barriers to health improvement. It is often by overcoming life circumstance issues that disease-oriented treatment can succeed.

Finally, ICM managers only bring value if the patients that they assist achieve health stabilization and as a result need fewer medical services. Yet ICM managers, though usually better trained and qualified than low and medium level care managers, are still health professionals unequipped to identify next steps in the care of patients with health complexity without the support of physicians. Patients with health complexity frequently have complicated illness and treatment interactions that lead to clinical non-response. For these patients, sophisticated care augmentation is required and best addressed through assistance from physicians involved in the patient's care or associated with the case management program.

ICM, thus, requires that ICM managers are supported and assisted by physicians and other treating clinicians in identifying second-, third-, and fourth-line interventions when initial treatment is not achieving timely and desired outcomes. This is an active and organized process and a core organizational attribute of effective ICM programs. It usually translates into phone access to physician support as well as defined weekly or biweekly case reviews in which the outcomes of predetermined ICM manager panel patients are systematically appraised for achievement of targeted outcomes. When patients are making inadequate progress, then physician-based expertise contributes to next steps.

The case review may be conducted by treating or non-treating clinicians with support, as indicated, from other medical and BH physicians or treating specialists who may add a second look at non-improving patients, discuss the clinical situation, and collaboratively examine options with those directly involved in the patient's care. When needed, escalation of care is initiated or a new action plan is devised by, or in partnership with, the patients' primary clinicians. Often the dialogue among the ICM manager and treating practitioners also includes a discussion of non-clinical factors that influence clinical adherence and/or outcomes. Thus, the ICM manager can be an important contributor to the application of escalated care since she/he is usually the one to elaborate on non-clinical factors affecting progress.

Table 4.2 Choosing and training ICM managers

1. Requisite health professional credentials and background
2. Willing to change to ICM approach to care support
3. Training in ICM principles and practice, including ICM-CAG score anchoring, care plan development, management implementation/completion, measured health outcome documentation, care escalation, and patient graduation (core ICM activities)
    - Ability to use the relationship-based dialogue to assess and score health complexity on the ICM-CAG and build plans of care with patients
    - Accountable for cross-disciplinary, multidomain clinical and non-clinical reversal of barriers to improvement
    - Can handle multidisciplinary, multidomain barriers to improvement with minimal case manager handoffs
    - Participates in physician (treating clinician, medical director) supported case review and assistance
    - Uses iterative case management intervention, updating and adjusting as needed
    - With guidance, fosters care escalation when desired “measured” clinical, functional, quality of life, satisfaction, and cost outcomes are not occurring as expected; “assist to target”
    - Graduates patients when documented goals or maximum benefit is achieved

Choosing and Training ICM Managers

Presuming that the organizational setup will allow ICM managers to efficiently and effectively deliver outcome-changing ICM assistance, attention can then turn to choosing and training ICM managers (Table 4.2). As mentioned in Chapter 1, ICM managers are usually skilled Level 3C and 4C health professionals who utilize their backgrounds and training in ICM work processes to actively assist patients stabilize health and return to normal function. Their ability to achieve this task, however, is directly dependent on three primary requisites for ICM managers:

1. They must be licensed or certified health professionals with backgrounds that enable them to understand illness, its treatment, and the care delivery system sufficiently to allow them to utilize this knowledge base and experience as they assist patients overcome barriers to health improvement.
2. They must be willing to assist with clinical and non-clinical medical and BH barriers to improvement.
3. They must be trained in core ICM activities that will allow them to systematically uncover and reverse barriers to improvement.

Health Professional Education and Experience

There are no licensed professionals in medicine, including those with medical degrees, who are prepared to deliver effective and efficient ICM, based on their education or clinical experience. Additional training in ICM is necessary. On the other hand, training and experience in a health-related discipline provides ICM managers with an understanding of medical vernacular; basics of multiple illnesses, i.e., their characteristics and their treatment; and components of the health system that allow them to create more effective problem-solving strategies with patients than those without. In general, the more educated and experienced health professionals are, such as those at Competency Levels 3C and 4C, the greater the degree to which they can contribute “medical savvy” to the ICM work process.

Individuals without healthcare experience or training (Level 1C personnel), nonprofessionals with personal experience in addressing the ravages of a chronic illness (Level 1C peer support personnel), and those who are recent graduates in a health-related discipline (Level 1C or 2C professionals) will be less equipped to assist patients by becoming ICM managers. This does not mean that they cannot participate in ICM programs but that they should assume support tasks for case managers trained in ICM procedures.

It is strategically advantageous to couple ICM managers with ICM manager assistants or organizational ICM specialists, i.e., Level 1C personnel or 2C professionals (see Table 1.7). ICM manager assistants and organizational ICM specialists would not perform comprehensive assessments nor develop care plans but would follow through on the required support activities needed to achieve patient goals in the ICM process. ICM managers assume assessment and care planning responsibilities while ICM manager assistants and organizational ICM specialists help with care plan activities, such as scheduling a mental health appointment, finding a pharmacy that gives depot medication injections, locating a Spanish-speaking primary care physician, etc. Many larger ICM programs routinely use trained ICM manager assistants or organizational ICM specialists to expand the reach of more highly qualified and expensive ICM managers.

One final note about to the utilization of licensed or certified health professionals has to do with the professions from which the ICM managers come. For programs in which varied populations of patients will be assisted through ICM, it is a recommended strategy to choose professionals for participation in the program with an assortment of backgrounds and skills, e.g., BH, pediatrics, obstetrics, rehabilitation, social work, etc. Developing a workforce with varied experience may enhance skill development among all ICM managers through collaborative ICM intra-manager cross-fertilization. It should not, however, result in segmentation of case manager activities.

Using this strategy, it is possible to expand BH, surgical, and/or pediatric manager capabilities among ICM managers, such as those primarily with general medical backgrounds. Specialists can help generalists, and vice versa, on a case-by-case basis. Using this approach, when patients are encountered with problems for which an ICM manager has not previously provided support, an experienced colleague can help walk the less experienced through the necessarily more focused management experience.

Eventually, the need for cross-fertilization will become less frequent and the professional capabilities of the total group of ICM managers will increase. In fact, it is important that ICM managers with selected expertise, such as those with BH backgrounds, not be preferentially assigned patients related to their BH expertise. All managers should work in interdisciplinary "pods," in which patients are randomly assigned, so that they can expand each other's comfort in addressing a broad range of health barriers. In this way, a single case manager, who is able to consult with other managers with skills in a specialty area, as needed, can maintain the "relationship" element of the ICM process that nurtures a patient's desire to change yet meet patient needs.

Willingness to Change from Traditional to Integrated Complex Case Management

ICM combines medical and BH assistance activities without handoffs and addresses both clinical and non-clinical barriers to improvement. Some traditional, and often well-qualified, complex case managers do not wish to add to their skill sets by learning necessary cross-disciplinary and non-clinical information that will allow them to expand to multidomain case management service capabilities. Thus, it is advisable before initiating training to determine if the ICM manager candidates are willing not just to learn, but also to apply ICM methodology before proceeding. Current experience in training traditional case managers coming from either medical or BH backgrounds indicates that about a quarter will refuse to assume an ICM manager role even after training. This largely has to do with discomfort with or preconceptions about cross-disciplinary service delivery. It is not worth training personnel in ICM if they will not use it.

Adult ICM Manager Training

Case management itself is a specialized area of nursing and social work in which licensed professionals who choose to seek credentialing as case management specialists expand their ability to perform core elements of the management process, i.e., identifying patients, doing an assessment, developing a care plan, implementing the care plan, evaluating progress, and closing cases (see Table 1.3). While having specialization in case management adds to the breadth of case management understanding, specific ICM training remains necessary since it takes general and traditional complex case managers (Level 2C and 3C) to a new level by introducing a number of key ICM principles and work practices (Table 4.3).

The adult ICM training program itself is composed of four elements: (1) studying *The Integrated Case Management Manual: Assisting Complex Patients Regain Physical and Mental Health* [1], (2) completing eight recorded sessions covering targeted areas of the ICM process and use of ICM tools, (3) participating in two days of face-to-face ICM implementation training, and (4) passing a test on core concepts of the ICM process. At the completion of training, adult ICM managers

Table 4.3 Key principles and work practices of adult integrated case management

- Pre-ICM triage for patients with health complexity
- Anchoring complexity-based ICM-CAGs using a relationship-based dialogue
- Building multidomain care plans, based on anchored ICM-CAGs
- Performing longitudinal iterative ICM with real-time outcome measurement
- Implementing physician-guided care escalation "assist to target" to reverse barriers and stabilize health
- Moving patients to self-management and graduation

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should be able to perform all of the competencies listed under #3 on Table 4.2. In addition to adult ICM training, pediatric ICM training is also available. A discussion of pediatric ICM training and how it differs from adult training is covered in Chapter 5.

There are several elements in the training program that are particularly important, as general traditional complex case managers become ICM managers. First, completion of the complexity-based comprehensive ICM-CAG assessment is not intuitive. Having undergone rigorous standardization during 20 years of research in Europe [2], the face-to-face training lets ICM managers learn how to: (1) complete the dialogue-based relationship-building initial assessment that allows score anchoring in the ICM-CAG, (2) interpret anchor points and then anchor scores, (3) translate anchored scores into a written plan of care that will lead to prioritized assistance, (4) execute the care plan, and (5) measure outcomes during the ICM process so that patients improve and cases can be closed.

Second, ICM training bridges the medical and BH case management divide by providing bidirectional cross-disciplinary management procedures for frequently encountered medical and BH conditions and comorbidities, setting the stage for broad-based medical and BH management without handoffs. As mentioned previously, cross-disciplinary management is a major area of resistance by traditional case managers, in both directions. Unless basic multidisciplinary skills are developed, general knowledge itself about the interaction between medical and BH conditions will not lead to effective ICM. As a result, health outcomes and cost improvement will suffer.

Finally, ICM training discusses variations in and the customization of ICM work processes when sponsored by different healthcare stakeholders, including health plans, Accountable Care Organizations, care delivery systems, government programs, and employers. How the ICM approach to management is applied will influence targeted success metrics.

After ICM managers complete the rigors of ICM training, physicians treating the patients assisted by ICM managers and physicians collaborating with them, such as ICM Medical Directors, can feel more confident that ICM-CAGs (discussed below) are correctly scored and will be translated into helpful assistance for patients. Importantly, physicians will learn things that they did not know about the patients receiving ICM assistance, not only from their interaction with ICM managers but also from the easily interpreted ICM-CAG itself. They will find that helping ICM managers to reverse clinical and non-clinical prioritized areas of complexity can have substantial effects on health and cost outcomes for their patients.

The Integrated Case Management-Complexity Assessment Grid (ICM-CAG)

At the heart of ICM is the ICM-CAG, the comprehensive case management assessment. In Chapter 1, readers got a glimpse at an example of a completed color-coded grid in a patient with health complexity (see Table 1.12). The easiest way to tell the level of complexity is to compare the amount of red and orange in the grid compared to yellow and green. Like a traffic light, red means stop and look, green means proceed unencumbered. Orange and yellow represent intermediate messages. Total scores in completed grids range from 0 to 60. Of course, another equally valid, yet less intuitive, way to look at the grid would be to review item scores of “0” to “3” and the total pre-calculated complexity tally.

So, what is the ICM-CAG? Table 4.4 graphically illustrates that the ICM-CAG is a grid with 20 “risk” boxes divided into four domains, the biological, psychological, social, (biopsychosocial) and health system, and three time periods, labeled historical, current, and vulnerability. Each box is a “complexity item” since it represents a content area in which patients (members, employees, enrollees, etc.) with increasing levels of difficulty related to each item predictably have impaired health outcomes if such “barriers to improvement” are present during the ICM manager’s comprehensive assessment. Complexity (or health risk) items are scored (anchored), based on defined “anchor points,” [1] (see Appendix B) on a scale of “0” (green) to “3” (red). Each scoring level is action-oriented:

- 0 = No vulnerability or need to act (green 🟩)
- 1 = Mild vulnerability & need for monitoring or prevention (yellow 🟨)
- 2 = Moderate vulnerability; need for action or development of intervention plan (orange 🟧)
- 3 = Severe vulnerability; need for immediate action or immediate intervention plan (red 🟥)

Thus, a score of “0” indicates that there are no problems in the area, i.e., it’s okay to move on. Whereas, a score of “3” says that something needs to be done, and soon.

Much time is spent in training ICM managers to translate information gathered from the initial evaluation with a semi-scripted dialogue and open-ended questions (Appendix C) into valid anchor scores in the ICM-CAG. From the ICM-CAG, the total level of complexity for a patient can be determined, disentangled areas of actionable complexity (Table 4.5) can be systematically addressed, and the care

Table 4.4 Integrated Case Management-Complexity Assessment Grid (*ICM-CAG*)

Date	**Health risks and health needs**					
Name	**Historical**		**Current state**		**Vulnerability**	
Total score =	*Complexity item*	*Score*	*Complexity item*	*Score*	*Complexity item*	*Score*
Biological Domain	Chronicity (HB1)		Symptom severity/ impairment (CB1)		Complications and life threat (VB)	
	Diagnostic dilemma (HB2)		Diagnostic/therapeutic challenge (CB2)			
Psychological Domain	Coping with stress (HP1)		Treatment adherence (CP1)		Mental health threat (VP)	
	Mental health history (HP2)		Mental health symptoms (CP2)			
Social Domain	Job and leisure (HS1)		Residential stability (CS1)		Social vulnerability (VS)	
	Relationships (HS2)		Social support (CS2)			
Health system Domain	Access to care (HHS1)		Getting needed services (CHS1)		Health system impediments (VHS)	
	Treatment experience (HHS2)		Coordination of care (CHS2)			

Table 4.5 ICM-CAG complexity item risk content areas covered

- *Chronicity (HB1)*: physical illness chronicity
- *Diagnostic dilemma (HB2)*: problems in diagnosing physical illness
- *Symptom severity/impairment (CB1)*: physical illness symptom severity & impairment
- *Diagnostic/therapeutic challenge (CB2)*: challenges to diagnostic and therapeutic implementation
- *Complications and life threat (VB)*: vulnerability to future physical complications and life threat
- *Coping with stress (HP1)*: psychological coping with stress
- *Mental health history (HP2)*: history of psychiatric problems or treatment
- *Treatment adherence (CP1)*: resistance to treatment/non-adherence
- *Mental health symptoms (CP2)*: behavioral health symptom severity
- *Mental health threat (VP)*: vulnerability to persistent personal barriers or poor mental condition care
- *Job and leisure (HS1)*: job and leisure problems
- *Relationships (HS2)*: ineffective or non-productive relationships
- *Residential stability (CS1)*: residential instability
- *Social support (CS2)*: poor social support system
- *Social vulnerability (VS)*: vulnerability to future additional home support or supervision needs
- *Access to care (HHS1)*: system level causes for poor access to appropriate care
- *Treatment experience (HHS2)*: problems with or distrust of doctors or the health system
- *Getting needed services (CHS1)*: ability to and ease of getting needed services
- *Coordination of care (CHS2)*: logistical challenge in getting coordinated care by providers
- *Health system impediments (VHS)*: vulnerability to future persistent poor access to and/or coordination of services

plan development process can prioritize risk areas having the greatest need for initial action. For instance, a "red" for the "Residential Stability" item (unsafe or inconsistent living situation—CS1) may demand assistance first compared to an "orange or red" for "Symptom Severity/Impairment" (acuity/severity of a medical condition—CB1). Someone with unsafe or no housing is unlikely to be able to follow through on assistance in supporting medical next steps. At the very least, the two would need to be what we call "linked" risks for poor health outcome, i.e., findings on CS1 would be a non-clinical contributing factor to CB2, which would be scored "3."

In addition to obtaining information related to complexity items on the ICM-CAG, the scripted interview closes by documenting the patient's clinical and functional goals, establishing their baseline satisfaction with the healthcare they have received, and obtaining a baseline assessment of their current quality of life. Each of these parameters will be used to inform the patient-centered ICM performance (PCIP—covered below).

Sixteen of the 20 items in the grid refer to historical and current risk factors. For each of these, actions can be written into a plan of care designed to achieve desired short-term and long-term goals. It is through improvement in these that the four vulnerability item scores will eventually change. Vulnerability items reflect when, in the absence of *individualized ICM manager support*, the patient can be considered ready for successful graduation and return to self-managed standard care. Vulnerability has less to do with the natural history of the health condition(s) of the patient than with what would happen during the 3–6 months after ICM manager assistance was discontinued.

Before moving to Elina's story, it is worth discussing advantages that the ICM approach, of which the ICM-CAG is a core component, brings compared to other models of case management. First, the ICM-CAG forces ICM managers to complete a consistent and comprehensive assessment. The ICM-CAG includes both clinical and non-clinical potential barriers to improvement. Many complexity risk items in the ICM-CAG are *not* picked up in traditional biomedical case management models, such as Coping with stress (HP1) and treatment experience (HHS2). Second, the ICM-CAG permits direct connection of assessment findings with prioritized plan of care actions.

Third, and perhaps most importantly, ICM allows documentation of real-time-measured health outcomes. It uses the PCIP to accomplish this task in five outcome areas: clinical, functional, satisfaction, quality of life, and fiscal (Table 4.6), but includes nuances in addition to straight measurement. For instance, one nuance is that patients are asked at the completion of the initial assessment to work with the ICM manager on the development of measurable *personal* clinical and functional goals (see the end of Appendix C). This not only cements the patient-ICM manager partnership but also enhances patient engagement since the patient then "owns" his personally developed goals. Baseline satisfaction and quality of life measures are also obtained at the completion of the scripted dialogue.

Table 4.6 Patient-centered ICM performance

Measure	**Baseline**	**Follow-up assessments**		
Time period	Initial (date)	First (date)	Second (date)	Third (date)
Clinical measure related to patient's goal				
Functional measure related to patient's goal				
Patient's health-related quality of life				
Patient satisfaction				
ICM-CAG score				
Case manager's clinical measure				
Case manager's clinical measure				
Case manager's functional measure				
Case manager's functional measure				
Case manager's economic measure				

Elina's Story

We now turn to another patient with health complexity, Elina. She was brought to the attention of Elina's health plan utilization management department and was referred to Heather, a health plan ICM manager, for follow-up. Heather had an opportunity to review Elina's claims record prior to talking with her. Average claims costs for the last 5 years was nearly $15,000 per member per month (PMPM), close to $176,000 per year. The claims record and discussion with the utilization manager indicated the following.

Elina is a 34-year-old female with a long history of multiple medical problems. She came to the attention of the utilization management program because one of her new specialist physicians requested health plan approval for an exploratory laparotomy in an attempt to identify the cause of Elina's long-standing abdominal pain. During the past 5 years, Elina had received three upper and lower endoscopies, undergone five abdominal computed tomographies and three magnetic resonance studies, two gallbladder radionuclide (HIDA) scans, and four pelvic ultrasounds. The most recent procedure had been an abdominal angiogram, which revealed no identifiable pathology but was associated with an inguinal bleed that required a 3-week hospitalization to stabilize. She had been tried on numerous medications, often with initial but unsustained success. Abdominal exploration had been performed unsuccessfully 7 years previously but Elina's doctors had no other suggestions. Their only alternative would be to continue narcotic analgesics at relatively high doses with no objective reason.

Additional information was gathered over two interviews and a total time of 1 h 30 min. After informed consent was obtained, Elina's current physicians were also asked to share notes containing recent clinical information. See Appendix D for the full story. There were many anecdotes once Elina became comfortable with Heather. Elina liked to talk. Elina's initial ICM-CAG (Table 4.7) was almost entirely red and orange and was shared with the health plan Medical Director who

Table 4.7 Elina's ICM-CAG at baseline

Baseline	**HEALTH RISKS AND HEALTH NEEDS**					
Elina	**HISTORICAL**		**CURRENT STATE**		**VULNERABILITY**	
Total Score = 42	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity **HB1**	2	Symptom Severity/Impairment **CB1**	2	Complications and Life Threat **VB**	3
	Diagnostic Dilemma **HB2**	3	Diagnostic/Therapeutic Challenge **CB2**	3		
Psychological Domain	Coping with Stress **HP1**	3	Treatment Adherence **CP1**	3	Mental Health Threat **VP**	3
	Mental Health History **HP2**	2	Mental Health Symptoms **CP2**	2		
Social Domain	Job and Leisure **HS1**	2	Residential Stability **CS1**	0	Social Vulnerability **VS**	1
	Relationships **HS2**	1	Social Support **CS2**	0		
Health System Domain	Access to Care **HHS1**	1	Getting Needed Services **CHS1**	2	Health System Impediments **VHS**	3
	Treatment Experience **HHS2**	3	Coordination of Care **CHS2**	3		

also reviewed the clinical notes and was familiar with how to interpret the complexity grid. Now, where to start?

Connecting ICM-CAG Findings with a Care Plan

First, it is clear from Elina's ICM-CAG that there are many more "red" items than it would be possible to address immediately, as suggested by ICM guidelines [1]. Total scores above 21 on the ICM-CAG have been associated with poor outcomes in the absence of ICM assistance [3–10], however; many intermittently hospitalized adult patients with health complexity have scores in the 30s and 40s. For Elina, even the "red" items need to be prioritized and systematically addressed over time. Thus, it is important to put Elina's situation into context. She has manifested her health picture continuously for at least the last 5 years and most likely many years prior to that. Her problem will not be solved in days to weeks, rather in months to years, if at all. The ICM-CAG merely provides a roadmap for initiating and continuing the management process.

Heather has been using the ICM-CAG long enough to recognize that Elina scored a "2" on chronicity, i.e., only one chronic medical condition—hypertension, which was not associated with the majority of services being used by Elina. Her medical director confirmed this anchoring score. Further, there were many more abdominal symptoms than objective findings of illness-related severity and impairment despite extensive evaluation. Elina could not work but she could participate in virtually all other family and volunteer activities. So where should Heather start in helping Elina achieve her personal clinical and functional goals? Elina defined her personal and functional goals in the following way:

1. Clinical goal—to better control her stomach pain: baseline 9/10 on pain analogue scale.
2. Functional goal—not so much time seeing doctors: baseline 10 medical encounters/month.

Since there were no objective signs of a medical condition for which Elina had used so many services in the past, further tests and procedures likely would be fruitless. Heather's Medical Director agreed with this. Denial of the laparotomy had been made prior to ICM referral. For that, Heather was sympathetic with Elina but quickly turned to a more positive approach, i.e., helping Elina find alternatives to control her symptoms and improve her life. (Note that if Heather been involved in the laparotomy denial, the relationship with Elina would already have been severed.)

That Elina would do poorly without Heather's help was evident from the three "red" scores for vulnerability but also 5 years of high healthcare service use. Further, it would likely be a while before "red" turned to "yellow" or "green." In talking with Elina and the ICM Medical Director, several things surfaced that, unless addressed, would prevent progress in controlling symptoms. Elina needed a physician, preferably in primary care, with whom she could develop trust and would be willing to work. Heather recognized that Elina was challenging for physicians during the clinical encounter and had already refused to return to certain clinics, so this would not be an easy task. Heather also needed to consolidate information about Elina's care so whoever assumed responsibility for her care would be better able to sort out the "diagnostic dilemma" without duplicating previous evaluations.

While it was clear that focusing on more workups and blind interventions for Elina's abdominal and numerous other complaints was not the answer, this had been the focus of attention by virtually every clinician Elina had seen. The challenge would be to slowly shift directions to achieve symptom control (or acceptance) without alienating Elina. At least the ICM-CAG gave Heather a platform from which she could discuss Elina's health with Elina and develop a game plan to share with others involved in her care, i.e., the color-coded grid with a developed care plan (CP) (Table 4.8). Since Elina's personal goal was pain control and a laparotomy had not been approved, Heather and Elina discussed the option of reviewing all that had been done so far and trying to find a doctor who understood and was willing to follow Elina as a first step.

The initial care plan for Elina is far less extensive than her ICM-CAG suggests is needed but represents what Heather considered a reasonable start after negotiations with Elina. She understood that this ICM relationship was likely to last months if not years. Heather reviewed the plan with her Medical Director to make sure that she was not overlooking something that might be dangerous to Elina. Further, she did not pursue all components of what she knew would ultimately be a lengthy, complicated, and evolving care plan. Luckily, she had the ICM-CAG, which would keep her on track.

Other areas reserved for attention during the next several months included helping to build trust between Elina and a new PCP (CHS2); clarifying whether BH conditions other than a substance use disorder and likely somatization disorder were present and needed attention (CB2, HP1, CP2—linked barriers); helping Elina learn to live with her symptoms (and discontinue narcotic use) (CP1, CB2—linked barriers), such as by working with a pain clinic; and determining if Elina met long-term disability requirements (HS1). Heather anticipated that work with Elina would be punctuated with starts and stops, resistance, and sometimes hard feelings. This was not going to be a simple case. There were more than even odds that ICM would end

Table 4.8 Elina's initial developed care plan (CP)

Barriers	Goals		Actions
CAG items			Prioritized
HB2, CHS2, CP1	*Short-term*	A trusted primary care physician for Elina	1. Assist Elina in finding a local physician 2. Share health challenges of Elina with new physician
	Long-term	Care continuity; trust	Help preserve physician relationship
CB2	*Short-term*	Understand objective findings from prior examinations and studies	1. Assist PCP perform review of Elina's prior clinical evaluations 2. Brainstorm alternatives to tests and meds for symptoms control with PCP and medical director
	Long-term	Perform only needed studies	Facilitate direction of care by PCP
CP1	*Short-term*	Reduction in needed medications	1. PCP review of current meds 2. Gradually discontinue unnecessary meds (iatrogenic substances of abuse) 3. Medication use diary
	Long-term	Follows recommended use of needed medications	Monitor medication use

based on Elina's frustrations about control and progress rather than satisfaction at ICM graduation.

Nevertheless, ICM for Elina had a significant upside if it was successful. Elina could gain better control of her symptoms. Healthcare service use and cost of care could drop dramatically. Time spent on health issues could substantially decrease, opening opportunities for family and extracurricular activities. Further, Elina would be at less risk for iatrogenic illness from unnecessary and redundant tests, medications, and exploratory procedures. She already had a major complication related to her angiogram. In reality, the risk of missing a hidden illness causing Elina's symptoms was less dangerous to her than the more aggressive assessments and treatments to which she was increasingly being subjected.

Integrated Complex Case Management (ICM): Actual Management of Patients

The example of Heather working with Elina demonstrates that ICM, especially in patients with high health complexity, is a challenging knowledge and skill-based process. Many common models of traditional case management do not appreciate this fact. Rather, they assume that utilization of talented, clinically seasoned nurses and/or social workers without additional training will lead to a successful case management program. Special procedures are unnecessary. Presumably, all that is needed is for the case manager to have an appreciation of general guidelines about how to educate patients about their illnesses, illness complications, and treatments; to improve the efficiency and effectiveness of the biomedical *or* psychological care delivered to them; and to assure that patients are adhering to recommended treatments.

A second common miscalculation on the part of many who implement traditional case management programs is placing an early emphasis on truncated assistance and on helping patients to learn self-management skills. While self-management is an ultimate goal of most case management programs, including ICM, it is not reasonable to expect that patients like Bob in Chapter 1, Lokandra in Chapter 3, and Elina in this Chapter will be able to fend for themselves in the near term, let alone months after being in case management. Patients with health complexity are often frustrated and defeated by their illnesses and resultant life circumstances. In the beginning, case managers need to do more *for* patients than *with* them. Once managers establish credibility and show that they care enough to put in some of their own effort, responsibilities can gradually shift to patients. This requires a longitudinal approach to the management process for outcomes to eventuate.

Finally, while all traditional case management models indicate that managers complete a comprehensive assessment of the patients that they work with, few clearly define what should be included or how assessment results inform assistance. For this reason, most case management programs target *clinical* barriers to improvement, the logical target for assistance, as the primary, and often the only, accountability for those providing service in their programs. Non-clinical barriers often receive attention only when they blatantly interfere with the recovery process.

ICM recognizes these shortcomings of traditional case management models and sets the stage for outcome-changing assistance by training ICM managers in standardized complexity-based comprehensive, communimetric assessments [11] that lead to focused and measured goals and actions as part of a longitudinal management process. The ultimate objective is clinical improvement and health stabilization accompanied by reduced impairment, greater satisfaction with care, better quality of life, and lower total healthcare costs. At the completion of ICM, patients should have the tools needed for self-management and return to standard care (graduation). But what is it that ICM managers do after the ICM-CAG is complete that leads to these desired outcomes?

Helping (Managing) an ICM Patient

ICM begins by documenting baseline measureable outcomes in five areas on the PCIP. For instance, jointly agreed upon personal- and ICM manager-generated “big picture” goals for Elina can be found in Elina’s baseline PCIP (Table 4.9). Once a baseline is established, then ICM proceeds with the end in mind, i.e., systematic and prioritized reversal of barriers to improvement found on the ICM-CAG with return to standard care (patient graduation). As ICM proceeds, the PCIP is updated at intervals

Table 4.9 Elina's initial patient-centered ICM performance (PCIP)

Measure	Baseline	Follow-up assessments		
Time period	Initial (date)	4 Months (date)	8 Months (date)	12 Months (date)
Elina's clinical measure (abdominal pain control—VAS)	9/10			
Elina's functional measure (doctor visits/month)	10			
Elina's health-related quality of life (days/week feeling well)	2			
Elina's satisfaction with care (VAS)	1/10			
CAG score	42			
Clinical measure (medications taken)	8 Routine; 16 PRN			
Functional measure (ability to work)	On LTD			
Economic measure (hospitalizations/4 months)	1			
Economic measure (ER visits/month)	3			

appropriate to the anticipated duration that the patient will be working with the ICM manager. In Elina's situation, involvement in ICM is likely to continue beyond a year, whereas, in less complicated patients, total ICM time could be weeks or months.

Barriers to improvement are delineated in ICM-CAG-guided and iterative CPs. An example of an initial CP is seen in Table 4.8 for Elina. These mutually agreed-upon documents by the patient and ICM manager contain more immediate but progressive goals and actions. Through the ICM process, they lead to monitoring of progress (CPOs) with the addition of an outcomes column to the CP (Table 4.10). *ICM goals* indicate where the ICM manager and patient wish to be at a future date, week, month, or year, related to the corresponding barrier to improvement. *ICM actions* are the steps that the patient, ICM manager, treating clinicians, and other stakeholders in the patient's outcomes agree to take to achieve ICM goals. Goals and actions are linked but often need to be amended during the management process when intermediate goals are reached, are not being achieved, or are replaced by others due to changes in clinical circumstances.

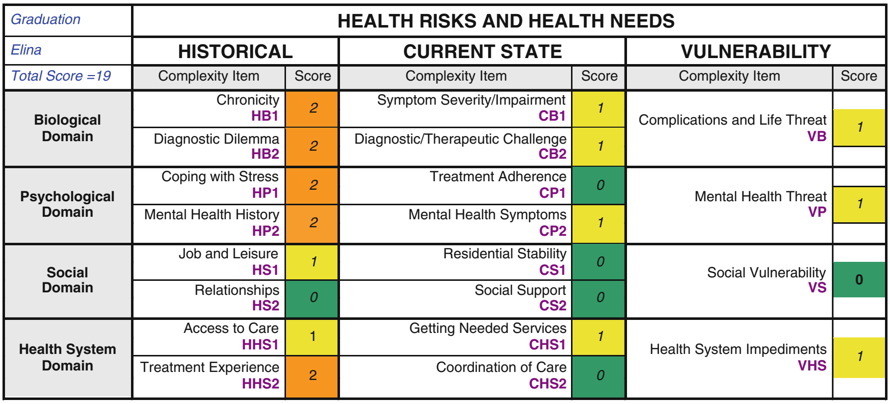
The ICM process is typically intense during the initial phases. There is bidirectional communication between patient and ICM manager, the patient's clinicians, and other stakeholders in the patient's outcomes. Information gathering, confirmation, and consolidation occur early followed by targeted care plan assistance, preferably in collaboration with the patient's physicians. When progress is not taking place, as the natural history of the conditions and their treatment would suggest should happen, then adjustments in the plan of care are made. This usually involves the patient, the patient's clinicians, the ICM manager's Medical Director, and the ICM manager, all of whom combine their efforts to achieve a common goal. More will be said about this in Chapter 6.

The iterative process of ICM, presuming that the patient chooses to remain engaged, eventually leads to health stabilization or maximum benefit. It is at this

Table 4.10 Elina's care plan outcomes (CPOs)

CAG items (Elina's) Barriers	Goal	Action	Outcome (at 4 months)
HB2, CHS2, CP1	Established primary care physician	1. Help find 2. Help PCP understand Elina's situation	Family physician in community health center understands need for consistency of practitioner
CB2	Clarity about Elina's health problems	1. Consolidate records with PCP 2. Understand PCP and medical director strategy	Most records obtained after Elina's consent, and summarized in single document (took months)
CP1	More appropriate use of medications	PCP med review with collaborative reduction and withdrawal	Immediate disposal of 5 redundant medications, withdrawal of 3 more medications over time

Table 4.11 Elina's ICM-CAG at graduation



Graduation	HEALTH RISKS AND HEALTH NEEDS					
Elina	HISTORICAL		CURRENT STATE		VULNERABILITY	
Total Score =19	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity **HB1**	*2*	Symptom Severity/Impairment **CB1**	*1*	Complications and Life Threat **VB**	*1*
	Diagnostic Dilemma **HB2**	*2*	Diagnostic/Therapeutic Challenge **CB2**	*1*		
Psychological Domain	Coping with Stress **HP1**	*2*	Treatment Adherence **CP1**	*0*	Mental Health Threat **VP**	*1*
	Mental Health History **HP2**	*2*	Mental Health Symptoms **CP2**	*1*		
Social Domain	Job and Leisure **HS1**	*1*	Residential Stability **CS1**	*0*	Social Vulnerability **VS**	**0**
	Relationships **HS2**	*0*	Social Support **CS2**	*0*		
Health System Domain	Access to Care **HHS1**	1	Getting Needed Services **CHS1**	*1*	Health System Impediments **VHS**	*1*
	Treatment Experience **HHS2**	2	Coordination of Care **CHS2**	*0*		

time that a final ICM-CAG and PCIP, such as Tables 4.11 and 4.12 for Elina elucidate, are produced and the patient is prepared for graduation from ICM. Of course, intermittent ICM-CAGs and PCIPs should be performed throughout the period of participation in ICM to guide progress and the need for adjustments. These are shared with the patient and with the patient's providers.

Graduation from ICM is a particularly vulnerable time for patients who have participated in ICM. By the time of graduation, a bond will likely have developed between the patient and the ICM manager. Neither desires to break the relationship and move on, but it is important that the patient take responsibility for self-management. For this reason, during the period just prior to graduation, especially in those who have been in ICM for some time, effort is devoted to consolidating

Table 4.12 Elina's ROM at graduation

Measure	Baseline	Follow-up assessments		
Time period	Initial (date)	4 Months (date)	8 Months (date)	12 Months (date)
Elina's clinical measure (abdominal pain control—VAS)	9/10	8/10	5/10	3/10
Elina's functional measure (doctor visits/month)	10	8	1	1
Elina's health-related quality of life (days/week feeling well)	2	3	5	5 (bad days)
Elina's satisfaction with care (VAS)	1/10	5/10	7/10	9/10
CAG score	43	37	25	19
Clinical measure (medications taken)	8 Routine; 16 PRN	5 Routine; 11 PRN	3 Routine; 3 PRN (no narcotics)	2 Routine; 3 PRN (no narcotics)
Functional measure (ability to work)	On LTD	On LTD	LTD dropped	No work; personal activities
Economic measure (hospitalizations/4 months)	1	0	0	0
Economic measure (ER vists/month)	3	2	0	0

gains in the patient as well as helping them to develop habits of healthy behavior, including following through on preventive measures associated with existing illnesses; exercising; following a healthy diet; and stopping destructive behaviors. Several ICM programs have found that it is easier to transition patients from "active" management to "inactive" status, rather than using the more final terms of "graduation" or "case closure." This allows patients to reinitiate contact with the ICM manager if they find that they are having more difficulty. The expectation, however, is that it is patient, not ICM manager, initiated.

Summary Comment

This chapter used a complex case, Elina, to help physicians understand the mechanics of the ICM process. While it condensed what actually happens during the ICM process, it provides a glimpse into the systematic approach that ICM uses to assist patients with health complexity. It is not the intent of this Chapter to suggest that all patients with health complexity will show the gains that Elina's story illustrates. In fact, gains by ICM managers are limited in most patients since the patients are drawn from a population with the greatest personal challenges to improvement. Further, patients with health complexity are often the most resistant to change, e.g., give up recreational substances, follow complicated treatment protocols, etc.

Even if a small percentage of those coming into contact with ICM managers show improvement, the gains in these few can compensate for the time spent with those who do not show improvement. For instance, Elina was utilizing nearly $175,000 annually in healthcare services with no relief on the horizon. If an ICM manager, such as Heather, can break the cycle of healthcare service use, persistent symptoms, more healthcare service use, in only a few of these patients per year, it is possible for her to create a win for all involved. Challenged patients get better. Physicians feel a sense of accomplishment and relief when their challenging patients finally show improvement. The care delivery system demonstrates an ability to achieve the Triple Aim in a costly subset of patients. Employers have a more productive workforce and lower contribution to insurance premiums. Government agencies have fewer patients using public program services. And, the system saves money.

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Chapter 5

The Organizational and Operational Setup of Pediatric Integrated Complex Case Management

> *"When families are so caught up in trying to take care of their child's mental health needs, regular healthcare needs—such as vision, weight, blood pressure, allergies—fall to the wayside. When care is integrated, parents only have to go through one door, not multiple doors, to make sure their child is healthy."*
>
> —Sue Abderholden, parent and executive director, NAMI Minnesota

Chapter Objectives

- *To delineate the similarities and differences between Adult and Pediatric ICM organizational environments, manager selection, and manager training.*
- *To review specific components of the Pediatric ICM-Complexity Assessment Grid and how they differ from the Adult ICM-Complexity Assessment Grid.*
- *To discuss development of pediatric care plans, with a broad view about the unique influences played by family, the school system, community services, and the health system.*
- *To share an outcome scenario describing how Pediatric ICM attempts to optimize a child/youth's physical, behavioral health, neurocognitive, and life situation outcomes.*

Chapter 4 describes in detail the operational organization of adult ICM programs. These programs are designed to bring the greatest value to patients as well as the health system stakeholders who sponsor them. Their success is accomplished by utilizing ICM to connect identified clinical and non-clinical barriers to improvement with goals and actions that will reverse them. This is true for adults with physical disorders, behavioral health (BH) disorders, or a combination of the two, while adding social and health system issues to the "multidomain" complexity mix. Patient candidates for adult ICM are considered to have health complexity.

So why is there a specific emphasis on pediatric patients? Should not the overall principles of ICM apply to 12-year-olds, just as much as they do to 52-year-olds? A pediatric ICM (PICM) would still have to encompass biological, psychological, social, and health-system considerations. So what special needs do patients under the age of 18 years have?

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In fact, there is not a clear "line in the sand" when working with individuals around the transition age. Utilizing ICM for a 17-year-old, for example, may not differ greatly from a 23-year-old. This is especially true if the 17-year-old has left home (emancipated minor) or is not involved in the educational system. Assessments for barriers to improvement and potential assistance procedures, however, are considerably different for younger children and any youth whose developmental stage lags his/her chronological age. Thus, the question becomes, "Can the adult ICM-complexity assessment grid (CAG) work for children/youth from birth to 18 years?"

As will be further described in subsequent pages of this chapter, there are substantial and unique influences related to physical growth, neurocognitive development, family/caretaker issues, school attendance and learning, and health system impacts that need to be considered for children/youth in relation to pediatric ICM management. In short, applying the ICM-CAG to pediatric patients does not adequately assess their child/youth-specific complexity needs. Before we discuss the PICM-Complexity Assessment Grid (PICM-CAG) itself, however, we will review organizational features that contribute to effective implementation of ICM for pediatric populations.

Value-Added Pediatric Components in Organizational PICM Environments

Similar to adult ICM programs, PICM programs require certain critical organizational features to reliably impact long-term health and life situation outcomes [1]. Some of these organizational features are the same as for adults, albeit while using child/youth-specific PICM tools and procedures, and some are different (Table 5.1 in *italics*). Readers are referred back to Chapter 4 for review of the environmental features pertinent to both adult and pediatric ICM programs.

Successful pediatric ICM programs focus on clinical, functional, and economic health outcomes. These serve as the end-points for the more immediate achievement of care plan goals. Thus, attention needs to be given to the support system in which trained PICM managers work so that their efforts will maximize enduring benefits for patients and families. Obviating the development of crises is as important in PICM as intervening when crises occur.

Effective PICM managers recognize and are committed to longitudinally addressing barriers to improvement associated with numerous life circumstances in a child/youth and the family unit. As such, PICM managers working in organizations with numerous resources, referral options, and community connections among their standard operating procedures are in a better position to assist in reversing health challenges for children/youth with health complexity. These child/youth-specific resources and connections must be understood, frequently reviewed, and routinely updated to maintain their currency and applicability when used on behalf

Table 5.1 Organizational program-based features that add value to PICM

- A dedicated and focused PICM manager job description
- Longitudinal cross-platform PICM work processes
- *Recognition of age-specific youth needs*
- PICM manager clinical *and* non-clinical assessments and assistance
- Pediatric medical and BH training and accountability without PICM manager handoffs; *parent/caregiver ICM support options*
- Collaborative PICM manager support and assistance together with physician treatment to achieve goals, using the "assist-to-target" and "treat-to-target" approach
- A systematic method for prioritizing patients appropriate for PICM
- Creation of appropriate staff to patient ratios for ICM support

of children/youth and families. While this can be labor-intensive, it is critical for ensuring positive PICM child/youth and family unit outcomes.

A nuance to this includes PICM manager appreciation for evolving physical, emotional, and neurocognitive development as children/youth grow. PICM management for a 2-year-old with severe spastic diplegic cerebral palsy and dysarthria could be very different than if the same child was 12. In some situations, the PICM manager assisting such a child/youth will have continuous involvement over those 10 years, and as the child/youth develops the assist procedures offered to the family would evolve. In others, adequately addressing complexity needs early, through PICM, may stabilize non-clinical or cross-disciplinary barriers to improvement sufficiently so that persisting serious and chronic manifestations of CP can be adequately controlled while participating in standard care.

A separate, but critically important, distinction with PICM is the variability in family structures that will impact the management process. Approaches to a child/youth with a strong and intact family structure will be quite different from one in which the family experiences significant stresses and/or acts in dysfunctional ways. If one parent is absent, or if the two parents are at odds over treatment approaches, such situations will strongly influence the options open to PICM managers. Parents may have little influence over older teens, especially if there has been a chronic history of conflict. Younger children typically will be highly influenced by their parents unless the parent is largely absent or unengaged.

Unlike adults, and especially the elderly, pediatric patients with complex health conditions have the potential to carry success into adulthood if their PICM management needs are effectively and efficiently addressed during developmentally critical time periods. These needs are identifiable for physical, neurocognitive, and psychological development. This is one component that distinguishes PICM from its adult counterpart. Examples of critical time periods where action can be taken in this regard include:

- Identifying and intervening for problems related to infant/child attachment to caregivers due to dysfunctional relationships during critically sensitive periods (generally under age three).

- Altering allergen exposure when persistent asthma associated with childhood exposure to secondhand smoke could develop (generally by age six).
- Increasing exposure to personal/social interaction in children/youth at risk for lifelong speech, language and reading deficiencies associated with lack of stimulation or neglect at home (preschool years).
- Fostering health and safety, including reduction in risky sexual behavior and drug and alcohol use, in children and adolescents (pre-teen and teenage years).

Optimizing both current and future outcomes associated with PICM is facilitated by collaboration between PICM managers and the physicians and other clinicians involved in the child/youth's care. This could be a primary care physician, a BH specialist, or a clinician consultant involved in a selected component of the child/youth's treatment. PICM managers, who have greater potential to spend time with the child/youth and his/her family and to assess clinical and non-clinical health risks, can often uncover risks during these critical periods not captured by the child/youth's doctors. Thus, there is particular potential for synergy between the work of PICM managers and physicians during such critical periods. Physicians complement PICM manager's findings by initiating treatment changes designed to correct identified risks and problems.

The range of professionals in various organizations with whom PICM managers potentially interact are summarized, but not limited to, the following:

- With each patient's local primary clinician (ideally one person) who oversees all medical and BH information sharing and provides primary healthcare services; most likely a primary care clinician, but could also be a specialist who supervises total care for a child/youth with a specialty-specific chronic disease.
- With specialty care clinicians who treat focal and specific medical, surgical, or BH conditions, e.g., pediatric cardiologists, pediatric surgeons, child psychiatrists and psychologists, pediatric nurse clinicians, etc.
- With allied health professionals, such as physical therapists, speech therapists, social workers, occupational therapists, psychotherapists, etc.
- With pediatric hospital and clinic administrative personnel and clinical professionals, including those in general hospitals and child psychiatry care settings, emergency departments and urgent care clinics, residential facilities, etc.
- With school system personnel, including teachers, teaching aides, behavioral specialists, and educational service providers.
- With personnel running daycare, Head Start, or afterhours child care programs.
- With child/youth role models, such as clergy, coaches, music teachers, scout masters, club leaders, etc.
- With county social workers and other social service agency personnel.
- With community agency representatives, including law enforcement and the juvenile justice system.
- With health plan customer service representatives and benefit administrators.

While this list is long, it is not exhaustive.

Table 5.2 Choosing and training PICM managers

1. Requisite licensed health professional credentials and background
2. Willing to add pediatric skills to ICM care support work processes
3. Training in core PICM principles and practice, including the following:
    - Ability to triage for high-risk children/youth in targeted populations
    - Ability to use the family-based relationship-building dialogue for assessment and scoring of health complexity using the PICM-CAG
    - Ability to build plans of care with and for children/youth and family units
    - Accountable for reversal of cross-disciplinary, multidomain clinical and non-clinical barriers to improvement with minimal case manager handoffs
    - Participates in physician (treating clinician, medical director) supported case review and assistance
    - Uses iterative PICM intervention, updating and adjusting as needed
    - Knows when to add adult ICM managers to assist members of family unit
    - With guidance, fosters care escalation when desired "measured" outcomes are not occurring as expected
    - Graduates child/youth when documented goals or maximum benefit is achieved

PICM managers who have backgrounds and experience in working with children/youth and their families have an advantage over those who have focused their prior professional healthcare activity on working only with adults. Nonetheless, PICM training (Table 5.2) was developed in a way that allows skilled Level 3C and 4C, and occasionally Level 2C, PICM managers (see Chapter 1) with adult-only clinical training and experience to gain the skills needed to effectively support assistance to children/youth and their families. Regardless of a PICM professional's background and level of competency, all require participation in PICM training. Organizations that fail to include PICM Study Sessions and Face-to-Face training as part of program orientation and implementation are at risk for exclusion of core ICM principles and practices (see Table 4.3). PICM principles and practices are identical to adults but use tools and procedures pertinent to children/youth and family units.

PICM involves significant attention to both children/youth and parent/caregiver needs. In fact, for some families, progress with the child may not be possible until significant parental barriers are addressed and effectively managed. This is one reason that PICM managers need to understand and use adult ICM work processes before entering PICM training. Organizations, thus, must uniformly train PICM managers in ICM prior to PICM. Further, it helps if future PICM mangers implement their adult ICM skills for several months in a sponsoring organization's setting before entering PICM training since it increases their understanding of ICM tools, options, and opportunities. This on-the-job experience can then be translated into better PICM assistance delivery.

PICM managers are tasked with assisting assigned children/youth to achieve health stability. In many situations, the parents/guardians also exhibit multidomain contributors to a child/youth's persistent illness and high health service use. For instance, parental homelessness, lack of employment, significant unmet medical or behavioral needs or health system barriers may need to be mitigated before progress for the child can be accomplished. When resources allow and it is appropriate within the family unit, the PICM manager can take on the additional "side" role of assisting family members or guardians on behalf of the child/youth. When insufficient resources are available or there are relationship challenges that complicate working with multiple family members, then a decision about whether to refer the parent/guardian for their own ICM or equivalent is necessary. Since parents and their children/youth are often covered under different insurance plans, referral within the same organization is not always possible. Programs sponsoring PICM managers should include in their orientations, options that are available for parents and caregivers. Thus, they can indirectly maximize the ultimate benefit to the child/youth.

PICM Manager and Clinician Collaboration

Similar to adult ICM programs, PICM managers bring value to children/youth, families, and their respective organizations only if their activities achieve health stabilization and reduce the need for use of future health services. Regardless of who the treating practitioners are, their interaction with the child/youth's PICM manager can improve children/youth and family PICM engagement, augment understanding of the relationship between clinical and non-clinical factors and health outcomes, and foster the development of common goals based on information provided by all involved in the treatment (clinicians) and assistance (PICM manager) process. Organizations that create work environments in which consistent and constructive communication between PICM managers and clinicians is possible will have greater success in achieving desired PICM program performance goals.

Since a core feature of PICM includes measured health outcomes, collaboration between the PICM manager and clinicians supports achievement of these outcomes in real-time. Further, collaboration expedites recognition of clinical non-response. The physician part of the PICM manager–physician dyad can alter treatment approaches, thus addressing clinical non-response. The PICM manager can help the child/youth and family follow through on changes in the treatment plan. It is this one–two punch that often makes the difference between health improvement with cost reduction and persistent high cost illness burden, which may persist into adult life.

As with adult ICM, in each PICM delivery program, there are challenges in creating a collaborative PICM manager–practitioner team, whether the sponsoring organization is a clinical system, a government agency, or a health plan.

- *Hospitals and clinics* often are insular in their approach to case management, i.e., focusing on maximizing benefit to their own targeted settings, such as the clinic or the hospital. Further, they often attempt to assist and support the entire clinical population rather than limiting management activities to children/youth with health complexity. This commonly overwhelms PICM managers' ability to bring a few long-term benefits to high need children/youth because time does not allow.

- *Government agencies* are challenged to find a sufficient number of providers with the time to work with PICM managers for the many children/youth in their ranks with high need. For providers receiving limited public program payment, clinic visits usually focus on the latest crisis. There is little time to interact with PICM managers and collaboratively derive benefit through individualized PICM assistance.
- *Health plans* experience challenges in children/youth and family engagement because strained provider relations do not engender practitioner cooperation in "health plan-based" recruitment or case management. As a result, health plan member engagement, i.e., the number willing to actively participate in PICM management, is often limited.

Despite these challenges in triage and establishing an effective physician and PICM manger team, all stakeholders in the care of children/youth need to explore creative options and relationships so that PICM can bring the greatest value to children and youth.

Training Pediatric ICM Managers

As was pointed out in Chapter 4, ICM managers are skilled health professionals who actively assist patients in stabilizing health and returning to normal function. PICM managers have the added dimension of optimizing long-term health and developmental outcomes for children/youth with complex needs. Thus, requirements for performing PICM are adjusted to this special population (Table 5.2).

An extra challenge is introduced in PICM by the fact that there are an insufficient number of health professionals with a child/youth focus or pediatric experience to meet the need for PICM managers. As a result, it has been necessary to develop training programs for adult ICM managers who will be assuming PICM responsibilities that include content specific to assisting children/youth and their families (Table 5.3). For instance, most adult ICM managers will not have an understanding of the age of majority (consent) for various types of child/youth treatments. Most will also have little experience in working with the juvenile justice system and child support services. These, among others, are training areas that must be covered as a part of PICM advanced practice training.

How much specific pediatric training and experience is necessary for a PICM manager to be effective? The answer is that "it depends." Of course, all PICM managers should be exposed to a core knowledge base in working with children/youth and families, such as, but not limited to, the examples below:

- How to work with family units in which the child/youth has poorly communicating divorced parents or conflicting thoughts about treatment options for the child/youth, especially as children/youth reach adolescence.
- Who can give permission to gather second source information.
- How to address concerns about child abuse.

Table 5.3 Key areas of knowledge expansion for "adult" managers doing PICM

• Pre-PICM triage for youth/family units with high health and cost needs
• Appreciation for the unique nature of pediatric illnesses and care
• Basics about the impact of growth and development on treatment planning
• How to work with families, schools, community groups, and social services organizations
• Understanding laws and regulations related to confidentiality and decision making in youth

Adapted from Kathol RG, Perez R, Cohen JS, The Integrated Case Management Manual, New York, Springer Publishing Co., 2010, with permission

- At what age informed consent is necessary in order to talk with parents/caregivers.

For smaller programs with limited personnel, it is probably best to optimize PICM by targeting a subset of staff for PICM training. While fewer PICM managers would be available, they would likely be more effective in working with the children/youth to whom they are assigned. For larger programs or those programs that extend across the entire age spectrum, effective PICM can be added to ICM gradually over time so that eventually all ICM management professionals will have both adult and pediatric skills. Often large systems are better able to allow a subpopulation of their staff to specialize, whereas smaller systems need "jacks of all trades" since the numbers of the subpopulation of clients/patients aren't as big.

Ideal teams for PICM include combinations of PICM-trained professionals with backgrounds pertinent to the population served, e.g., adult and pediatric generalist and specialty nurses, adult and child/adolescent behavioral health specialists, and social work and child development specialists. Within such a collaborative work environment, there can be seamless sharing about issues and barriers that arise. Often someone on the team will have a potential solution based on her or his specific skills, training, and experience. This type of environment leads to enhancement for all clinicians through a real-time cross-fertilization process, as was illustrated in the previous chapter. To this can be added access to pediatric and child psychiatry Medical Director expertise when there is a need to brainstorm about third- and fourth-line clinical intervention options and/or communicate with treating practitioners. An alternative or supplemental option is to identify a knowledgeable practicing clinician in the community who is willing to serve as a "sounding board" for PICM managers.

The Pediatric ICM-Complexity Assessment Grid

As was noted above, it is necessary to complete adult ICM training before proceeding to PICM training. This may not be intuitive since child/youth outcomes are the target of PICM manager involvement, but it is very important. The basic ICM and PICM process is the same. Managers "anchor" a PICM-CAG (Table 5.4) using a relationship-building dialogue (Appendix E), create a prioritized individualized care plan (Appendix F), assist children/youth and their families while documenting

Table 5.4 Pediatric Integrated Case Management-Complexity Assessment Grid (*PICM-CAG*)

Date	**Health risks and health needs**					
Name	**Historical**		**Current state**		**Vulnerability**	
Total score =	Complexity item	Score	Complexity item	Score	Complexity item	Score
Biological Domain	Chronicity (HB1)		Symptom severity/impairment (CB1)		Complications and life threat (VB)	
	Diagnostic dilemma (HB2)		Diagnostic/therapeutic challenge (CB2)			
Psychological Domain	Coping with stress (HP1)		Treatment adherence (CP1)		Learning and/or mental health threat (VP)	
	Mental health history (HP2)		Mental health symptoms (CP2)			
	Cognitive development (HP3)					
	Adverse developmental events (HP4)					
Social Domain	School functioning (HS1)		Residential stability (CS1)		Family/school/social system vulnerability (VS)	
	Family and social relationships (HS2)		Child/youth support (CS2)			
	Caregiver/parent health and function (HS3)		Caregiver/family support (CS3)			
			School and community participation (CS4)			
Health System Domain	Access to care (HHS1)		Getting needed services (CHS1)		Health system impediments (VHS)	
	Treatment experience (HHS2)		Coordination of care (CHS2)			

Table 5.5 PICM-CAG complexity item risk content areas covered

New

- *Cognitive development (HP3)*: intellectual impairment/delay
- *Adverse developmental events (HP4)*: traumatic physical or mental life events
- *Caregiver/parent health and function (HS3)*: caregiver health impairment or disability
- *Caregiver/family support (CS3)*: caregiver support resources
- *School and community participation (CS4)*: school attendance

Edited for children/youth

- *Diagnostic/therapeutic challenge (CB2)*: special challenges for a child/youth
- *Coping with stress (HP1)*: psychological coping with stress pertinent to child/youth
- *Treatment adherence (CP1)*: resistance to treatment/non-adherence (parent or child/youth)
- *Mental health symptoms (CP2)*: child psychiatric symptom severity
- *Mental health threat (VP)*: effects on learning and mental condition care
- *School functioning (HS1)*: school performance and socialization
- *Relationships (HS2)*: family relationships/challenges (child/youth and parent)
- *Residential stability (CS1)*: residential instability/safety and nutrition
- *Child/youth support (CS2)*: supervision and support
- *Family/school/social vulnerability (VS)*: vulnerability for future relationship, living, school needs
- *Treatment experience (HHS2)*: parent or child/youth problems with doctors or health system
- *Coordination of care (CHS2)*: care coordination and youth to adult transition challenges
- *Health system impediments (VHS)*: vulnerability for poor access, transition, coordination of services

goal attainment (Appendix G), measure multifaceted outcomes (Appendix H), escalate care when needed, and then graduate the child/youth back to standard care when barriers to improvement have reversed or stabilized. As with adults, progress in the PICM program is demonstrated by reduction in multidomain vulnerability scores on follow-up PICM-CAGs.

Familiarity and experience with the adult ICM process serves as the foundation for PICM. The biggest difference in the assessment is that the PICM-CAG adds five additional items to the complexity grid (Cognitive Development—HP3; Adverse Developmental Events—HP4; Caregiver/Parent Health and Function—HS3; Caregiver/Family Support—CS3; School and Community Participation—CS4). It also adjusts content of the remaining 20 “adult” complexity cell items to be pertinent to children/youth (Table 5.5). For instance, historical items refer to the lifetime of the child/youth, not just the last 5 years. “Job and Leisure” in the adult CAG (HS1) is changed to “School Functioning”. “Social Support” in the adult CAG is specified “Child/Youth Support” (CS2) in the PICM-CAG since a “Caregiver/Family Support” (CS3) item has been added.

Treating practitioners do not complete PICM-CAG assessments, but they need to understand the scoring implications of items in the grid to implement clinical changes that improve “high” anchored scores. Having this knowledge will help practitioners recognize when a child/youth’s needs are ripe for an altered clinical approach, such as augmenting medical interventions or treating unrecognized BH conditions, or for PICM manager assistance, such as supporting the identification of safe housing or nutritional supplementation or helping find a secure job for a parent/guardian. Specific anchor points for the PICM-CAG can be found in Appendix I, and the actions that a PICM manager may take on behalf of the child/youth for each item can be found in Appendix J. It is worth the reader's time at this point to peruse each of these Appendices. It will help to gain an appreciation for item content and anchor points as well as the actions associated with each performed by PICM managers and clinicians. This is particularly important if a practitioner will be working with children/youth supported by PICM managers during the foreseeable future.

Patient and Clinical Practitioner Indoctrination to PICM

For children/youth and families, an introductory appreciation of PICM's contribution to the child/youth's care and how to interpret the complexity grid is helpful. PICM managers frequently use the child/youth and parent/caregiver version of the "Understanding 'Complexity Assessments'" document (Appendix K) to engage children/youth and their families in the PICM process. The document contains three simple paragraphs that explain how the PICM-CAG attempts to detect barriers to the child/youth's improvement with an illustration of the color-coded grid and summary comments for each risk-based item. From this, it is possible to move from the assessment dialogue to the child/youth support portion of PICM, i.e., where and how to start the assistance process.

Since PICM is a newcomer to patient assistance procedures, most physicians and other clinical practitioners will not be familiar with PICM and the value that it can bring to children/youth in their practices. Physicians and clinical practitioners, however, are the primary sources for helping patients understand which "health-related" services would be of value in the journey back to health. This is true whether the PICM process is supported through the physician's clinical delivery system, a sponsoring health plan, a government agency, or the parent/guardian's place of employment. For this reason, a complementary, but slightly more detailed, explanation of PICM and the PICM-CAG for clinicians can be found in the clinician version of "Understanding 'Complexity Assessments'" (Appendix L). ICM and PICM managers can share this document with practitioners, accompanied by a cover letter (Appendix M), when children/youth in their practice are new to PICM. They do this in an attempt to marshal clinician support for PICM and also to engage them in the assistance process.

Using the Anchored PICM-CAG

An anchored PICM-CAG, which informs the development of a prioritized care plan in the same way that was described for adults in Chapter 4, allows PICM managers to open a dialogue with both family units and physicians. With minimal explanation and the "Understanding Complexity" document, the PICM-CAG is largely intuitive.

Red indicates that the item is an area needing assistance procedures and green that the item requires no attention.

Thus, sharing a scored grid with a parent/caregiver and child/youth serves to open a discussion on whether the PICM manager "got it right," and then how and where the assistance process can start. There will be differences of opinion about individual item scores between the family and the PICM manager. There may even be disagreements about scoring between parents and a youth. The point is that the PICM-CAG opens communication about barriers to improvement and engages the family and child/youth, where help should begin and how it should proceed. Engagement is an important part of the PICM process and it begins with the child/youth and parent/caregiver. If they do not agree with the direction of action, there will be little change and PICM will be ineffective.

The same opportunity lies with the child/youth's clinicians. Sharing a scored grid on a child/youth often opens the eyes of physicians to new possibilities on how to accomplish health stabilization. The PICM-CAGs can bring suggestions to physicians and other clinicians on the treatment team about adjustments to interventions that may be effective. For instance, the clinician may not be aware that the child/youth has not been using his/her inhaler at school because it is embarrassing to do so in front of classmates. Though simple and straightforward, a discussion on how to inform friends about the need for and use of an inhaler can be the difference between poorly controlled asthma, ER visits, and hospitalization versus persistently stable breathing. Additionally, the PICM-CAG manager can invoke the support of her/his PICM Medical Director who can connect with the treating practitioner and serve as an external resource when the clinical situation is complicated and would benefit from a secondary review.

A PICM-CAG manager is the conduit for information and interaction with treating practitioners. The intent is not to suggest that the child/youth's physicians are not intervening correctly. Rather, it is to bring to the clinicians' attention information they may not be aware of, e.g., prescriptions from two providers for medications in the same drug class, or information suggesting that improvement is not occurring at an expected rate, such as when depression symptom scores worsen while on the same dose of antidepressant for over 2 months. This new information creates an opportunity for the child/youth's clinicians to explore next steps with the child/youth and parents/caregivers, often with the added expertise of another knowledgeable physician, the PICM Medical Director.

In addition, the PICM manager can contribute directly as a part of the assistance process since she/he gathers and is accountable for changes in non-clinical barriers to improvement. For instance, discontinuous insurance coverage, unmet nutritional needs, or interfering parental health issues may be contributing to poor child/youth treatment adherence or completion of a diagnostic clinical evaluation. It is the responsibility of the PICM manager to actively participate in correction of these contributors to persistently poor health that may not be apparent to clinical practitioners.

Improvements over time in the PICM-complexity score will reinforce the need and value of PICM and will provide documentation of outcomes for the child/youth that are visible to parents and clinicians. Further, use of the PCIP can demonstrate "big picture" value in five areas considered critical to program success for all stakeholders in the return of children/youth to health, including the sponsoring organization, a crucial player from which long-term support of the PICM program emanates.

Comparing the ICM and PICM grids side by side can be valuable for reinforcing the overall concept of the complexity grid as well as demonstrating the inherent differences.

- In the "Biological Domain" the cells are essentially equivalent. While the specific medical conditions may vary, there is the same relative weighting of this category.
- In the "Psychological Domain" there is the specific inclusion of "Cognitive Development" (HP3) and "Adverse Development Events" (HP4). Both of these can have significant bearing on the case management process, the overall complexity scoring, and pose significant barriers to overall health improvement.
- The "Social Domain" has the most significant differences. "Jobs and Leisure" (HS1) in the adult grid is replaced by "School Functioning" in the child grid. Adult grid "Relationships" (HS2) is replaced by both "Family and Social Relationships" (HS2) and "Caregiver/Parent Health and Function" (HS3) to reflect the compelling influence of the family and extended caregivers in the pediatric grid. "Social Support" (CS2) in the adult grid is divided into three cells in the pediatric grid: "Child/Youth Support" (CS2), "Caregiver/Family Support" (CS3) and "School and Community Participation" (CS4). This serves to acknowledge the unique and powerful role each of these areas have on health for children/youth. The final cell in the pediatric grid reflects this broader influence, and is entitled, "Family/School/Social System Vulnerability" (VS) as opposed to simply "Social Vulnerability" (VS) on the adult grid.
- The "Health System Domain" has the same equivalent categories, but the scoring of individual cells will again reflect the unique nature of pediatric conditions. For example, speech therapy services for adults often reflect rehabilitative therapy after an injury—stroke, traumatic brain injury or cardiac-induced hypoxic event. For a pediatric population, the focus of speech therapy may be more along the line of "habilitative therapy", designed to help a child attain the developmentally appropriate level of speech and language ability.

The total number of complexity cells in the pediatric grid is 25 compared with 20 in the adult grid. The maximum complexity score for pediatrics is 75 compared with 60 for adults. Effort was made early in the development of the pediatric grid to keep the number of cells at 20. This turned out to be unworkable for a number of reasons, reflecting the evolving nature of child development and the expanded nonclinical factors. This does not change the fundamental process of accurately scoring each cell and completing the grid. It only becomes important when trying to compare the numeric value of complexity in adults and in pediatric patients, as it is not a "one-to-one" comparison. Thus, threshold scores for involvement in PICM and the number of cases assigned to managers based on total caseload complexity scores will differ.

The three advantages of the PICM-CAG are the same as for the adult CAG. First, the PICM-CAG compels ICM managers to complete a consistent and comprehensive assessment. Both clinical and non-clinical barriers are identified in a manner that traditional case management methods do not use. Second, the CAG permits direct connection of assessment findings to prioritized care plan actions. Third, it allows for real-time measurement of clinical, functional, satisfaction, quality of life, and fiscal improvement over time.

Pediatric Case Example: Johnny

To illustrate the comprehensive assessment and care plan developments that are possible through application of the pediatric ICM-CAG, consider the case of Johnny.

Johnny is now 10 years old. He started out as a 27-week gestational age preemie, born to a 24-year-old single mother, April, who was experiencing symptoms of chorioamnionitis, an infection of the fluid surrounding the fetus, at the time of his delivery. In spite of receiving optimal care in the neonatal intensive care unit (NICU), Johnny suffered a number of complications of prematurity, including chronic lung disease, moderate cognitive delays, retinopathy, and hearing loss on his right side. His chronic lung disease was exacerbated by a strong family history of asthma and secondhand smoke exposure in the home.

Now age 10, Johnny has two younger siblings and April is a still single mother. His biologic father, Jerome, lives out of state and stopped paying child support soon after Johnny's first birthday. Jerome currently is in prison serving an 8-year sentence for drug-related charges. April works outside the home and Johnny's maternal grandmother serves as the primary caregiver for him and his siblings when April is working. Further, April has her own health issues, including asthma, borderline diabetes, hypertension, moderate obesity, depression, and frequent excessive alcohol consumption. The family's subsidized housing situation is stable.

Johnny's current health is marked by poorly controlled asthma, recurrent exacerbations of eczema (a strong family history) and frequent stomach pains, possibly due to a combination of constipation and gastroesophageal reflux. April has a hard time getting him to doctor appointments and is unable to adhere to his "asthma action plan". Johnny's grandmother and uncle, who live in the home, smoke. April does not like the way she is treated by the doctors when she takes Johnny to his clinic appointments. She feels like she is being scolded about the care she is providing to Johnny.

Johnny's school progress is marginal at best due to significant cognitive deficits presumably related to his prematurity and the chorioamnionitis at the time of birth. He is a very "active" child in his classroom setting. His attention span is short and he has delayed reading and math skills. The school itself is overcrowded and understaffed, with very few ancillary services, such as tutoring support, speech, and language therapy, or resources for hearing impairment. His classroom contains ten students over the recommended maximum number for his grade level with a single teacher present in the room.

Johnny does not do well with playtime, recess, or other group activities. He does not participate successfully due to his high activity level, short attention span, and *impulsive behaviors. He is not involved with community sports, partly because his asthma worsens with physical activity. The family has few connections to the community, other than with a small group of neighbors who have lived in that area for more than 8 years.*

Social services and healthcare resources have both been generally unavailable to Johnny and his family. That said, April has not been an advocate for Johnny. Work demands, health issues, and frequent alcohol intake preclude attention to Johnny's needs. April has a hard time making it to Johnny's school conferences, even though she knows they are important.

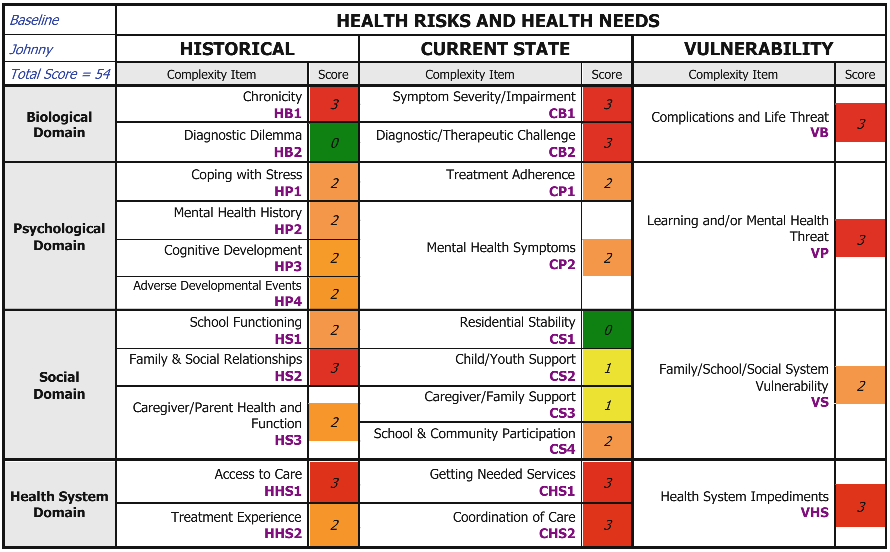
Finally, even though Johnny is covered through a subsidized health insurance plan, clinics that accept the limited subsidized plan payment are not readily accessible. They are located at a distance from Johnny's home, have limited after-hour appointments, and have high physician and nurse practitioner turnover. Specialty care is even less accessible. Referrals for Johnny's asthma, eczema, and stomach pains are almost always at times and in locations impossible for April. Further, April is not convinced that Johnny really needs that level of care anyway. Why can't a "regular" doctor take care of this, she wonders?

Johnny's Complexity Grid

Patient identification for inclusion of PICM comes through various triggers, e.g., total claim costs, repeated emergency department visits, hospitalization for potentially preventable conditions, identification by clinicians as having comorbid and complex conditions, among others. Johnny surfaced for consideration of assignment to PICM because his "accountable" primary care pediatric clinic used its registry to uncover patients with complicated and poorly controlled health conditions. Johnny was missing many clinic appointments, had used the emergency room 5 times in the last 2 months, and was hospitalized on one occasion with a near-death experience due to status asthmaticus. He was costing the system much in health service use and had a potentially lethal condition. Unbeknownst to Johnny's doctors, he took his scheduled breathing medicine only occasionally and did not remember how to use his inhaler.

Once identified for PICM, the next step was to approach April and get her buy in. A PICM enrollment specialist, attached to the Accountable Care Organization (ACO) to which the pediatric clinic belonged, approached her and Johnny at Johnny's next clinical visit about the possibility of engaging in PICM. The PICM process was explained using the "Understanding Complexity" information sheet and was supported by the pediatrician who saw Johnny that day. April stated that it would be difficult to get permission from work for another appointment to complete the PICM evaluation. The enrollment specialist anticipated this and had a PICM manager, Shalonda, standing by to initiate the PICM-CAG. The initial interview took about an hour and a half but was well received by April. She saw potential, not

Table 5.6 Johnny's PICM-CAG at baseline



Baseline	**HEALTH RISKS AND HEALTH NEEDS**					
Johnny	**HISTORICAL**		**CURRENT STATE**		**VULNERABILITY**	
Total Score = 54	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity **HB1**	3	Symptom Severity/Impairment **CB1**	3	Complications and Life Threat **VB**	3
	Diagnostic Dilemma **HB2**	0	Diagnostic/Therapeutic Challenge **CB2**	3		
Psychological Domain	Coping with Stress **HP1**	2	Treatment Adherence **CP1**	2	Learning and/or Mental Health Threat **VP**	3
	Mental Health History **HP2**	2	Mental Health Symptoms **CP2**	2		
	Cognitive Development **HP3**	2				
	Adverse Developmental Events **HP4**	2				
Social Domain	School Functioning **HS1**	2	Residential Stability **CS1**	0	Family/School/Social System Vulnerability **VS**	2
	Family & Social Relationships **HS2**	3	Child/Youth Support **CS2**	1		
	Caregiver/Parent Health and Function **HS3**	2	Caregiver/Family Support **CS3**	1		
			School & Community Participation **CS4**	2		
Health System Domain	Access to Care **HHS1**	3	Getting Needed Services **CHS1**	3	Health System Impediments **VHS**	3
	Treatment Experience **HHS2**	2	Coordination of Care **CHS2**	3		

only for Johnny's health but also her own. Johnny's grid identified multiple areas of potential need (Table 5.6).

The first thing to notice is the multiple items associated with high complexity (scores of "2" and "3") in all four domains. When working with either adults or children with health complexity, this is a common occurrence. The next steps of PICM are the critical ones to bring improvement in Johnny's life, i.e., connecting PICM-CAG anchored items with care plan goals and actions. Progress may be slow initially, but systematic and intentional PICM will serve Johnny and his family well. Further, it will become obvious in weeks to months if improvement is occurring since the PICM patient-centered ICM performance (PCIP) supports documentation of real-time change on meaningful clinical, functional, and fiscal outcomes as well as child/youth and family satisfaction and quality of life (Table 5.7).

Inexperienced or novice case managers, such as those at Competency Level 2C or below (see Table 1.7), would likely throw up their hands at Johnny's complexity whether documented through a PICM-CAG or alternative assessment. They would have difficulty knowing where to start the assistance process, most likely starting with what they know, i.e., is the asthma correctly diagnosed, is Johnny taking the right medications, is he filling his prescriptions, is he following the doctors' orders. While missed appointments, dissatisfaction with doctors, and Johnny's behavioral problems would surface, they would be unlikely to reach center stage; however, without addressing these issues poor control of Johnny's asthma would persist and potentially progress. Other areas of importance would remain in the background, such as smoking exposure and the contribution of April's health to Johnny's poor care and follow-up. This is where training, supervision, case review and feedback to competent PICM managers have greater potential for supporting timely health stabilization.

Table 5.7 Johnny's pediatric patient-centered ICM performance

Measure	**Baseline**	**Follow-up assessments**		
Time period	5/17/2014	Date	Date	Date
Johnny's clinical goal (better breathing–# episodes/week)	12			
Mother's clinical goal (fewer trips to ER–#/month)	2.5			
Johnny's functional goal (fewer disciplinary measures at school–#/week)	2/week			
Mother's functional goal (improved school performance–# calls home from school personnel/week)	3/week			
Johnny's health-related quality of life (# of friend-related activities/week)	0			
Family satisfaction with healthcare (VAS 1-10)	2			
Johnny's PICM-CAG score	54			
Johnny's clinical measures *– FEV1* *– Missed breathing meds (# Rxs/week)*	 72 % 12/14			
Johnny's functional measures (improved school performance–progress on individualized educational plan goals)	0/6 goals met			
Johnny's economic measure (ER//PCP encounters–ER//PCP visits/month)	2.5//0			

Johnny's PICM-CAG initial score was 54. Just as with the adult complexity grid, anchoring consistency within an organization is a key attribute for a high quality and well-functioning PICM program. Basically, it should not matter which of the PICM managers scores Johnny's case, they should all achieve a total score within 3–4 points of each other. Individual item scores will vary somewhat due to practice style and intervention priorities, but they should direct the development of a similar collaborative care plan between Shalonda and April.

Johnny's Care Plan

The next critical step after creating a complexity grid is developing a care plan based on the PICM-CAG. This care plan will be unlikely to address all of the high-need (red) areas initially. Prioritization of risk areas that pose a danger must be the first order of health assistance for the protection of Johnny. Since Johnny nearly died during a recent hospitalization, addressing Johnny's asthma is listed at the top of the care plan. However, support for Johnny's acute respiratory problem will not be sustained unless other identified issues, such as the mother's difficulty in getting off work to provide transportation to the doctor, use/abuse of alcohol and allergens in Johnny's home, are addressed (Table 5.8).

Of course, there are also other areas that are contributing to Johnny's persistent health difficulties and high service use that must be addressed once the prioritized potentially lethal situation has stabilized. Some of these, such as addressing Johnny's academic achievement, are listed at the bottom of Table 5.8 without long-term goals nor inserted actions. Still others, such as Johnny's eczema; chronic abdominal pain; mental health issues, including attention deficit disorder with hyperactivity (ADHD); and need for community-based support, will be addressed in the care plan at a later date. These important—yet less acute—parts of the care plan are not present in Table 5.8 since space does not allow. Since PICM is an iterative process, having a fully completed care plan at the onset of working with Johnny is preferable so that all factors are understood during prioritization and timely attention to each barrier to improvement can remain in mind and be delivered as soon during PICM as possible.

The care plan is a tool for improvement that the child/youth and family create jointly with the PICM manager. This should reflect what is feasible and possible for the PICM manager—in coordination with the family—to accomplish. Motivational interviewing is always core to the case management process [2–4]. Change is hard but comes only from the child/youth with the support of his/her family. Thus, motivational interviewing skills coupled with use of the child/youth and family personal goals will help them to identify the desired goals as their own.

Documenting Value for Johnny and the PICM Program

The care plan outcome (CPO) and PCIP templates for children/youth is the same as the documentation templates used for adults. The CPO confirms that care plan actions are completed and that short- and long-term goals are being achieved. As each prioritized goal is accomplished, then goals and actions for barriers representing lower need are added until each of the identified items in the PICM-CAG have been addressed with documentation of one of three outcomes for each item: (1) resolution of barrier, (2) stabilization of barrier with additional progress unlikely, or (3) maximum benefit has been reached.

Some care plan goals will not be achieved or will require that the PICM manager, the child/youth and family, and the treating clinicians revisit the actions needed to achieve desired goals. In some situations, goals and actions will require alteration as the reality of the illnesses or life situations experienced are more challenging than initially thought or as clinical circumstances change. Regardless, the MP3 is the instrument that can be used to document care plan (CP) outcomes, as exemplified in Table 5.9.

Table 5.8 Johnny's initial care plan (CP)

Barriers	**Goals**		**Actions**
CAG items			**Prioritized**
CB1, CB2, CP1, HHS2, CHS1	*Short-term*	Controlled asthma attacks	1. Quantify number of attacks and prescribed breathing medications 2. Assists in finding a nearby primary care clinic 3. Helps establish a consistent primary care physician (PCP) 4. Have Medical Director talk with PCP about possible specialist involvement (pulmonary, allergy) 5. Explore transportation/mother's support during Johnny's clinical stabilization—create "acceptable" strategy 6. Document appointment and treatment adherence 7. Monitor change in asthma attacks—share with clinicians/April
	Long-term	Minimal impact of asthma on daily activities	1. Support caregivers in reducing tobacco use in the home 2. Have Medical Director ask about home allergen testing 3. Assure communication of PCP and other clinicians 4. Address bad experience with doctors
HS2, HS3, HP1	*Short-term*	Maternal support for Johnny	1. Support mother in addressing her health issues, including alcoholism 2. Identify & address main barriers preventing mother and Johnny from attending school and health appointments
CP2, HP3, HP4	*Short-term*	Improved academic achievement	1. Submit a request for the school to evaluate progress on Johnny's IEP 2. Advocate for reevaluation of Johnny's IEP with the goal of increasing support for his cognitive delays, hearing loss, and vision loss

Recording of the progress made toward improving outcomes is important for reinforcing value to the family; winning support of physicians, other clinicians, and clinical administrators; and tracking program success. Table 5.10 provides an example of Johnny's PCIP at graduation. It is different than the CP and CPO in that it assesses meaningful big picture outcomes for Johnny, whereas the CP and CPO measure progress with the steps along the way. The PCIP is perhaps the most important component of the ICM and PICM process because it provides concrete evidence of

Table 5.9 Johnny's care plan outcomes (CPOs)

CAG items (Johnny's)	**Goal**	**Action**	**Outcome (1 month)**
Barrier CB1, CB2, CP1, HHS2, CHS1	Controlled asthma attacks	1. Establish Johnny's clinical situation 2. Help find PCP and potential specialists 3. Confirm available transportation 4. Establish adherence	1. New PCP closer to home; summarized clinical information 2. Uncle helping with transportation 3. Starting to use inhalers regularly
Barrier HS2, HS3, HP1	Maternal support	1. Develop relationship with mother 2. Work with mother to identify her personal health goals 3. Identify the main barriers to attending Johnny's health & school appointments	1. Mother attended a visit with her PCP 2. Still drinking but considering seeking treatment 3. Identified transportation as a major barrier for attending appointments
Barrier CP2, HP3, HP4	Improved academic achievement	1. Submit individualized educational plan (IEP) reevaluation request	1. Mother wrote a letter requesting IEP reevaluation 2. School has scheduled the reevaluation

health improvement to win the support of even the most skeptical physician, while formulating the critical "value story" for long-term support and success of the program. It is also a component of PICM that takes time and effort to complete.

Johnny's Graduation

The ultimate goal of PICM is to move the child/youth and family to the point of self-management and self-sufficiency. Though it may not always be possible or practical, the child/youth's clinical treatment team should be consulted about the decision to graduate the child/youth from PICM and request support in the transition process back to standard care. Graduation from PICM should be celebrated in whatever way that is most appropriate for the program's setting. Tracking this metric will reinforce the value that PICM brings to families and the organization as a whole.

Where applicable, families that have successfully completed PICM and have moved to graduation may serve as a resource and support group for other families that are just starting in the process. They can also serve as ongoing advisors to PICM to create even better PICM support capabilities. Finally, they can serve as a transition resource for families that are nearing the end of their PICM participation.

Table 5.10 Johnny's PCIP at graduation

Measure	Baseline	Follow-up assessments		
Time period	5/17/2014	6/15/2014	7/12/2014	9/15/2014
Johnny's clinical goal (better breathing–# episodes/week)	12	7	2	2
Mother's clinical goal (fewer trips to ER–#/month)	2.5	1	0	0
Johnny's functional goal (fewer disciplinary measures at school–#/week)	2/week	2/week	1/week	0/week
Mother's functional goal (improved school performance–calls home from school personnel/week)	3/week	2/week	0/week	0/week
Johnny's health-related quality of life (# of friend-related activities/week)	0	0	2	5
Family satisfaction with healthcare (VAS 1-10)	2	5	8	10
Johnny's PICM-CAG score	54	48	43	37
Johnny's clinical measures *–FEV1* *–Missed breathing meds # Rxs/week*	 72 % 12/14	 75 % 7/14	 82 % 1/14	 83 % 0/14
Johnny's functional measures (improved school performance–progress on individualized educational plan goals)	0/6 goals met	0/6 goals met	1/6 goals met	4/6 goals met
Johnny's economic measure (ER-PCP encounters//ER-PCP visits/month)	2.5//0	1//3	0//2	0//1

Summary

PICM shares many of the essential features of adult ICM. There are sufficient differences when working with a pediatric population and their families, however, that a parallel but separate approach is needed with characteristics specifically designed for children/youth. To date, we are aware of no other case management program, especially created for children/youth, that has assessment and intervention components particularly focused on the integration of physical and behavioral health and the incorporation of social and health system factors impacting health, as are found in PICM. It is our hope that with appropriate training, competent ICM managers with or without pediatric backgrounds will be able to improve outcomes for families with children/youth having early life health complexity. Ultimately improved health during early life development may lead to better health and productivity in adulthood, thus continuing the return on the health system's investment throughout the lifespan.

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Chapter 6
Indirect and Direct Physician Support for Integrated Case Management in Adults

> *To lead people, walk beside them… As for the best leaders, the people do not notice their existence. The next best, the people honor and praise. The next, the people fear; and the next, the people hate… When the best leaders work is done the people say, "We did it ourselves!"*
>
> —Lao-tsu

Chapter Objectives

- *To help physicians differentiate the types of assist-and-support services being offered/delivered to their patients.*
- *To clarify physician's roles in relation to ICM and other forms of case management.*
- *To expand on patient triage prior to enrollment in ICM.*
- *To describe what physicians need to know about the ICM-CAG, its anchor points, and the anchored ICM-CAG's relation to the development of care plans.*
- *To explain physician collaboration with ICM managers during iterative case management as patients move to ICM graduation.*
- *To elucidate the synergy between ICM managers and physicians in improving patient health.*

The Physician's Guide is being written to assist physicians and other treating professionals effectively work with ICM managers so that they can maximize long-term health and cost benefits for patients and the system. ICM is an advanced branch of case management, which targets total health improvement in patients, and especially those with health complexity. It can be used to address the needs of patients with selected medical and/or BH conditions, such as occurs in disease management programs, or those with combinations of illnesses. It is effective in both medical and BH settings and patients, but has its greatest value when there is a desire to assist patients regardless of illness combination or location of service. This allows ICM to be used in multiple venues including care delivery systems, such as hospital and clinical systems or ACOs; government programs; employers; health plans; and other companies or organizations that desire to improve the total health of a population and reduce its health-related costs.

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Since ICM is not disease-oriented, it can be used effectively for patients with relatively common chronic illnesses, such as diabetes mellitus, bipolar affective disorder, and congestive heart failure, as well as for those with uncommon yet chronic conditions, like amyotrophic lateral sclerosis (ALS), paranoid disorder, or Goodpasture syndrome. While it can be employed in patients with illnesses of low severity and acuity, ICM is especially designed for patients in high clinical need and with high health-related cost. Being applicable for patients with a wide range of conditions and illness severities allows ICM implementation as a unified approach to case management for all clients/patients within an organizational structure.

ICM is not intended to be a quick fix for focused needs of patients, though components of it can be used effectively for such. Rather, it is broad-based and constructed so that ICM managers develop a relationship with their patients and assist them in achieving longitudinal health stabilization or maximum benefit. In most patients, ICM can be completed in several months, though with less complex patients duration of assistance may be measured in weeks. For a small percentage of patients, such as Bob and Elina, correction of barriers to improvement may take the better part of a year. In a few, persistent longitudinal assistance may be required to safeguard health stability.

The construct of ICM is different than assist-and-support work processes specifically devised to impact isolated barriers to improvement. For instance, there are now many transitions of care programs intended to ensure that communication among clinicians and coordinated care is streamlined as patients pass from inpatient to outpatient settings. This is a unique time-specific form of patient healthcare assist-and-support services with evidence of value [1]. It is performed during the several weeks after hospital discharge to prevent the need for readmission and to decrease the likelihood of adverse medical events at a time of high patient vulnerability.

ICM can also address needs arising from care transitions (CHS2 in the ICM-CAG—Coordination of Care) but does not limit its activity to this individual assistance procedure. Rather, through the ICM process, care transition needs are addressed while uncovering and dealing with multiple other barriers to improvement that may be present. ICM's goal is not only to reduce readmissions and post-discharge adverse events but also to help patients stabilize their total long-term health. Isolating single areas of health risk and correcting them, such as care transitions, is core to ICM but fits within the context of a comprehensive prioritized assistance process.

Recognizing these core principles of ICM, how do physicians participate in ICM and contribute to desired outcomes? This Chapter will discuss the role of physicians in relation to four activities, i.e., patient triage, ICM-CAG findings interpretation, collaboration in ICM, and patient graduation. Before addressing these areas, however, a few words will be said about helping physicians: (1) differentiate ICM from other types of assist-and-support services and (2) understand the different roles that they might play when involved with ICM activities.

Table 6.1 Core value-enhancing ICM practices

- Pre-ICM triaging for patients with health complexity
- Using relationship-building comprehensive multidomain assessments
- Correct anchoring of complexity-based ICM-CAGs
- Building medical and behavioral care plans, based on anchored ICM-CAGs
- Performing longitudinal iterative ICM with real-time clinical, functional, satisfaction, quality of life, and fiscal outcome measurement
- Implementing physician-guided escalation of care to reverse barriers and stabilize health
- Moving patients to self-management and graduation

Table 6.2 Questions used to differentiate "management" types

1. Does the manager mainly "approve or disapprove" medical or behavioral services/procedures for patients? If yes, stop!
2. If not, what are the assist-and-support goals?
   - Assist with a chronic illness, care transition, return to work, other
   - Assist with total health outcomes (medical, BH, both)
3. On average, how long will assistance and support be provided to the patient?
   - Single encounter, days, months, years
4. What type of assistance and support is given?
   - Situation/condition-focused assistance, e.g., education, adherence, etc.
   - Clinical and non-clinical assistance

Differentiating ICM from Other Types of Assist-and-Support Services

Since the majority of assist-and-support activities available in today's market do not use core-value-enhancing ICM practices (Table 6.1), physicians working with a "case manager" first need to understand what type of assist-and-support services the manager is providing. Terminology that is used to describe case managers, such as care manager, care coordinator, patient navigator, or health coach, does not tell physicians about the actual work processes that will be used or what the manager's goals are. Current terminology is ill defined, which leads to confusion about what patients and their physicians can expect, both in terms of services and outcomes.

In fact, many calling themselves "case" or "care" managers are really "benefit" (utilization) managers (see Chapter 1) and, thus, do not contribute to improved outcomes for patients. Benefit managers rarely talk with patients. Rather, they adjudicate patients' benefits. To differentiate benefit managers from case managers, simply ask whether the "management" personnel are *primarily* (50 % or greater time allocation) charged with "approving and disapproving" delivery of services to patients (Table 6.2, question #1). Those who do, including many who say they devote only 25–50 % time to these activities, are benefit managers regardless of what term they use to describe themselves. *Additional time need not be spent working with them once medical necessity discussions are complete since theirs is not a "patient helper" role.*

Chapter 1 differentiates patient healthcare assist-and-support programs, based on management intensity and summarizes characteristics associated with each (Table 1.4). In many situations, those performing low-intensity management do not interface with their "client's" physician. They tend to work in the background, directly with the client, and under the direction of many potential supporters of the low-intensity care management services. For instance, employers may contract with employee assistance professionals, wellness coaches, and/or disability managers to foster improved productivity of their workforce by encouraging healthy behaviors and assisting employees through illness episodes. Most often, physicians have no idea that these managers are even talking with one or more of their patients.

Physicians should generally support such low-intensity managers, even though managers don't communicate with them or their office staff since they typically support treatment adherence and healthy behaviors. Problems can arise when these managers (and managers providing greater levels of management intensity): (1) raise questions about the appropriateness of treatment or (2) arise from multiple sources of help, e.g., from health plans, employers, and ACOs, all supporting independent but similar manager services at the same time. When either of these occurs, patients and their physicians need to work together to determine which managers are of value and should become part of the patient's care team and which should not.

Medium-intensity care managers are more likely to contact one or more of a patient's clinicians. Most often, these managers work directly with patients experiencing active though less acute and severe health problems, e.g., renal failure program managers, workers' compensation managers, and county caseworkers. To differentiate these managers from high-intensity care managers, additional clarifying questions (Table 6.2, questions #2, 3, 4) can be of help.

Medium-intensity care managers, also called case managers (see Chapter 1), actively interact with patients at discrete time points in their care to accomplish a targeted goal, such as education about a chronic condition and reinforcement of adherence behaviors (disease management), assistance with getting needed procedure approval (workers' compensation), or supporting end of life services (palliative care). Even when these case managers are not a part of the physician's hospital and clinic system, they are professionals worthy of physician endorsement to patients. Their job is to foster better patient understanding of illness, follow through on treatment recommendations, and help coordinate clinical services.

Medium-intensity care managers usually interact with patients' physicians or their staff only occasionally; such as to obtain clarification of treatments and therapeutic goals, since medium-intensity case manager work processes are generally well delineated. When approached, it is a value to the patient for her/his physician or the physician's staff to collaborate with medium-intensity care manager support though they may not be directly in control of it. To the extent possible, it is well to try to understand the medium-intensity manager's approach to support and her/his ultimate goals to make sure they are in synchrony with the practitioner's.

High-intensity case managers, also called complex case managers, deserve the greatest involvement and support from physicians for their managed patients if a value-added model is used, i.e., one likely to improve health outcomes while conserving or reducing the need to use healthcare services. Complex case managers are more likely to address a broad range of health challenges experienced by the patients with whom they work, to use a longitudinal approach, and to provide clinical and non-clinical assist activities (Table 6.2, questions #2, 3, 4), especially when patients with health complexity are the target population. Models of complex case management, however, vary in:

- How they triage patients.
- What constitutes a comprehensive assessment.
- Whether they address both medical and BH conditions.
- How they perform assist activities and interact with patients, the patient's clinicians, and community support personnel.
- What constitutes success at the completion of the management process.

Thus, before practitioners spend time supporting these potentially valuable resources, it is well to contact the support organizations providing the management in order to clarify the triage procedures, the assessment process, the management activities and average durations, and the targeted outcomes. This will help physicians know whether the complex case management model used for discrete patients is likely to bring long-term improved health with the potential to reduce total health costs. Further, such inquiry will inform the physician about whether she/he can tap into the management support process to augment outcomes in other identified patients with health complexity.

ICM is a subset of complex case management with defined triage recommendations, relationship-based assessment and intervention procedures, standardized care plan development methods, multidisciplinary longitudinal assistance, and measured health outcomes as primary success metrics. Because of the well-defined, value-added features associated with ICM, this Physician's Guide specifically discusses how physicians can maximize results from its use through interaction with and support of ICM managers.

Physician Roles in Actual ICM Management

Physicians may play three general roles associated with the delivery of ICM and other forms of case management. First, they and other licensed practitioners may serve as primary treating clinicians for the various symptoms/ailments/conditions experienced by patients assigned to an ICM manager. Second, they may serve as Medical Directors to the ICM managers assisting patients. And third, they may be providers secondarily involved in specific aspects of a patient's care, such as a surgical specialist or physiatrist, with whom an ICM manager is involved. Each of these has an important role in augmenting the patient experience and improving health outcomes, but physicians in each of these roles must understand how they can collaborate to optimize results.

Treating Practitioners

As discussed in Chapter 1, the practice of medicine is a team sport in today's healthcare environment. While the treating physician–patient relationship is at the heart of the care process, physicians and other treating providers are now expected to work with clinical teams to maximize health in populations of patients. Case managers can be part of this team, directly or indirectly. "Direct" case managers are those working within a discrete hospital and clinic system or as employees of a physician group. Employers of direct case managers control the location of service delivery, determine manager workflows and activities, and establish goals and objectives. Often direct case managers work onsite with physicians and patients in their clinics and hospitals. Some bring value. Others do not [2].

A health plan, a business, a government agency, or a patient's family may alternatively support "indirect" case managers. While indirect case managers do not work directly with treating physicians, they may still be of considerable value to patients depending on their employer's approach to care support and assistance. Most indirect case managers assist patients over the phone, i.e., telephonic case management. This is a form of case management that can be efficacious [3–5], about which many practitioners are unaware. Other indirect case managers support patients at or near their place of residence, so called "feet on the street" case managers. This latter approach to case management is most commonly used as a part of public programs since patients with low socioeconomic status often don't have the resources to allow unfettered phone "minutes" or a stable living situation. Going to them is necessary for assistance to be given.

The first step for treating physicians is to ascertain the level of management intensity being delivered by the direct or indirect managers to whom their patients are being exposed, based on the description above (also see Chapter 1). Little time need be spent with benefit (utilization) managers unless it is to advocate for additional services needed by the patient. Low-intensity assist-and-support personnel can bring value to patients but usually do not need assistance or involvement by patients' physicians. Tacit support is all that is required unless negative manager effects are brought to the physician's attention, such as questioning the therapeutic approach or the presence of multiple conflicting managers for the same patient.

Medium-intensity case managers deserve more attention and backing by treating clinicians as long as their objectives are coordinated with those of the treating practitioner and her/his staff. Even isolated gains, such as manager stimulated use of a diabetic diary, support for treatment compliance, or education about a chronic condition can add to better outcomes for patients. Since medium-intensity case managers usually have established workflows, support for these professionals usually does not interfere with a physician's clinic routine. It does, however, require that the case manager have access to needed patient information and endorsement by the treating provider. In return, the case manager should keep physicians, who are actively participating in the patient's care, abreast of what is being done on the patient's behalf along with positive and negative outcomes related to the case manager's involvement.

When a value-added form of complex case management, such as ICM, is identified as the approach being used by a case manager, more active physician collaboration is usually beneficial for both the treatment team and the patient. Value-added complex case managers become partners with physicians in the journey to health for their patients in common. *Physicians diagnose disorders and recommend treatments. Complex case managers help to create a treatment environment supporting execution of treatment plans and achievement of health goals. Complex case managers ensure that care is coordinated and that patients are able to follow through on treatment recommendations; are getting better; and, if not, are moving to the next line of assist activities or treatment.* Thus, physicians and complex case managers should work collaboratively on behalf of the patient to achieve common goals.

This means that physicians should encourage patient cooperation with complex case manager support and supply needed clinical clarification about the patient's health issues and treatment planning. Simultaneously, the complex case manager should share information with the patient's physicians on uncovered clinical and non-clinical barriers to improvement and the assist activities being pursued. Challenges with medication and/or treatment adherence are an example where the case manager may have very helpful information about which the treating clinician is unaware.

Communication and collaboration between physicians and complex case managers is easier when the two are part of the same system, e.g., within an ACO, but this is not always the case. Complex case managers may work for a health plan or a case management sub-contracted vendor's team. Thus, sometimes it is necessary for the physician and case manager to collaborate by obtaining necessary releases of information to share pertinent information verbally and through written/electronic record access. Typically, as part of complex case manager's work routine, permissions, such as those found in the ICM Universal Consent Form template (Appendix N), will also be obtained to support communication among multiple physicians and other providers involved in complex patients' care.

Patients involved in complex case management are commonly those in whom health stabilization has been elusive. Thus, many do not improve with first or even second line approaches to treatment. In these situations, the complex case manager may be charged with documenting whether improvement is occurring and assisting in initiating the next steps needed for "measured" clinical outcomes to occur. They do this in two ways. First, they identify non-clinical factors that may contribute to treatment non-response, e.g., that the patient never filled his/her prescription due to cost or didn't show up for a needed test due to a language-based misunderstanding. When non-clinical factors are involved, complex case managers work with patients (and their physicians) in correcting these barriers.

And second, when non-clinical factors do not appear to be a major contributor to non-response, complex case managers work with both treating physicians and their case management Medical Director (when available) to brainstorm about and adjust the treatment approach as indicated. While the treating physician is the ultimate decision maker in a patient's care, a case management Medical Director can be of considerable assistance by providing fresh ideas about potential intervention options and/or specialty support.

While complex case managers can be of considerable assistance to selected patients, their involvement with patients can also become burdensome to the daily flow of patient care, especially when they compete for patient and physician time with other managers supported by varied patient-outcome stakeholders, e.g., health plans, government programs, or employer groups. In these situations, physicians can become overwhelmed and patients can become confused. From a logistical point of view, it is preferable for complex case managers to be organized through a single source for a discrete population and to use common management procedures understood by treating physicians. When this is not possible, the patients and physicians will need to develop a strategy that maximizes the benefit that case managers can bring.

In many forms of case management and complex case management, treating practitioner participation is not an expectation. Other than occasional sharing of necessary information about the patient and management activities, the two professionals work in parallel to each other but with little direct contact. This is not the case for ICM and its ICM managers. In ICM, open communication and collaboration among the patient, direct and indirect ICM managers, treating practitioners, and other clinical team members is preferred. Communication can be expedited through mutual medical record access and sharing of the ICM-CAG, CP, CPO, and PCIP findings.

ICM differs from many forms of complex case management in that it is measured health outcome, not process, oriented. When expected improvement is not occurring, then both treating practitioners and the ICM manager are important contributors to and accountable for the patient's return to health. Treating physicians and other providers, such as BH therapists or psychiatrists, provide the needed medical expertise to "treat to target" while the ICM manager tackles non-clinical barriers and supports next treatment steps in collaboration with the patient and the patient's clinicians, i.e., "assist to target."

Case Management Medical Directors

In the current traditional "management" environment, program Medical Directors are generally called upon only to support program administration or to assist managers when direct contact with treating providers is required for selected patients. For most Medical Directors, the latter falls in the domain of utilization management where clarification about medical necessity is required. In most case management programs, Medical Directors typically are not as actively involved in patient management activities. Rather, they spend the majority of their time supporting program logistics and answering questions that case managers may have related to illnesses in specific patients. Occasionally, they may also participate in case conferences.

ICM recognizes that nurses, social workers, and case managers from other health professions often do not have the expertise needed to develop assistance and/or treatment alternatives for patients with health complexity based on their level of training and experience. Further, it understands that busy clinicians may be reluctant to work with ICM managers due to lack of understanding about the value that ICM managers bring, or just a heavy workload. Treating practitioners may also bear hostility toward the location from which the manager is supported, e.g., a health plan. For this reason, *ICM Medical Directors* not only support the ICM program they also provide access to ad hoc physician level expertise and participate in routine review of active ICM manager cases. This allows them to understand clinical and non-clinical patient circumstances and to discuss alternatives when improvement is not occurring.

When adjustments to the therapeutic approach appear worth considering or non-clinical information about a patient would be of value to the patient's treating practitioners, direct provider communication may be considered. This is a particularly important, yet under recognized, contribution found in ICM that is not a part of many other complex case management programs/models. In order to do this effectively, the ICM manager must have defined goal expectations, the ability to measure clinical and functional outcomes, and an ICM support system, including the availability of one or more Medical Directors that allow her/him to identify and receive assistance in moving a patient toward health. Collaboration between ICM Managers and Medical Directors is vital for this "assist and treat to target" component of ICM [6–8].

Using this model, the ICM Medical Director reviews a predetermined subset of the ICM managers' patient panels weekly or biweekly and helps develop alternative approaches to correct unsuccessful assist activities or treatments currently underway. Once the review is completed, the ICM Medical Director may communicate with selected treating providers of non-improving patients to discuss potential helpful options. The treating physician is the one who decides and may initiate changes based on the discussion. While some treating physicians, who do not understand the benefit of ICM, consider this as an intrusion to their autonomy, those with knowledge of ICM and the value of team care realize that the ICM-CAG and Medical Director expertise may expedite achievement of health goals. The ICM process helps to explore alternatives for patients who may not respond to standard treatment protocols. Such mutual effort often can create a "win" for all.

Other Treating Practitioners

In addition to the primary and specialty medical and BH providers making ongoing longitudinal contributions to the patient's care, there will be other physicians or treating professionals who provide expertise, recommendations, and/or interventions, such as medical or surgical specialists, naturopaths, or counselors. While these clinicians may only see the patient occasionally or provide services that may seem extraneous to the focus of case management, they still constitute a meaningful component of care and/or can create dissonance about the treatment approach.

For this reason, they should also understand and be receptive to ICM and other complex case manager queries and, when needed, they should participate in the case management process. For instance, when a patient receives conflicting information from two treating providers, such as a primary care physician and an alternative medicine provider, it is important for the conflict to be clarified, if not resolved, on behalf of the patient. This is often an activity in which ICM and other complex case managers can assist.

Physician's Role in Patient Triage for ICM Assistance

The general principles of triage were outlined in Chapter 2 (see Case-Triggering versus Health Complexity Assessments). Triage itself does not bring value to patients but it is essential for ICM to ensure that patients with the most to gain clinically and economically are preferentially targeted to receive this advanced time-intensive service. Administrative clinician input, including the ICM manager supervisors and ICM Medical Directors, is an important part of this process since they understand the goals of ICM and the number of case managers needed to support the clinical population. ICM Medical Directors can also help to prioritize the patients most in need of services at the time of identification. Administrative clinicians support internal consistency and facilitate direct communication with treating clinicians.

Treating physicians may also participate in the triage process. They are most familiar with the population served, so they may confirm that patients identified by automated case-triggering systems are the best candidates to benefit from ICM services. They may also already have identified patient-specific barriers to clinical improvement, thus contributing valuable information for the initial evaluation. Furthermore, to the degree that they understand that there will not be enough ICM managers to help with every patient, treating physicians can contribute to initial patient database targeting procedures and subsequent clinical algorithms.

It is a combination of administrative clinicians and treating physicians who are most suited to inform the level of rigor that will be used to reduce the total population to the 2–8 % of highest risk patients using patient registries, claims databases, predictive modeling tools, and/or complex case-identifying clinical algorithms. When this is complete, informed clinical judgment can then further restrict the number eligible for ICM participation based on available clinical information, treating practitioner experience with the patient, the motivation of and ability to communicate with the patient, and the fiscally based limitation in the number of ICM managers available to deliver ICM services. *Ultimately, the goal is to select those who can benefit most from ICM services, clinically and economically, and to prioritize assigning them to an ICM manager with time to support their care.*

Higher health complexity in ICM manager patient panels limits the total number of patients that can be assigned to a case manager. Further, overextending ICM managers negates potential for health and cost improvement. Thus, an ICM manager panel size should be based on measured complexity of their patient panel, such as with composite ICM-CAG scores. For instance, the average number of total patients that can be carried at a given time by an ICM manager serving a highly complex population subset ranges between 20 and 50. Depending on the number of months that patients are in management, the total number completed (graduated) by each manager in a year ranges from 125 to 250. This would mean two to four ICM managers would be required to serve 5 % of a panel of 10,000 patients (500 patients) being treated by a group of five primary care physicians with patient panels of 2000 each.

Because case management is a clinical enhancement that is satisfying for patients and physicians, there is commonly a desire to enroll more patients in ICM than the number of ICM managers would be able to effectively handle them. For this reason, it is necessary to place strict limits on the total number of patients assigned and managed, presuming that triage procedures are enrolling those with the highest risk and highest need. Further, the management activities of ICM managers should be structured so that patients move toward improved outcomes and "graduate." This allows them to move on to new cases. As will be seen, real-time outcome measurement documents targeted improvement and ICM-based vulnerability assessments inform appropriateness for graduation using ICM methodology.

Physician Understanding of ICM-CAG Anchoring and Its Relation to Care Plan Development

Physicians and other treating providers do not perform ICM-CAG assessments nor do they create care plans based on complexity findings. They do, however, need to understand the implications of anchored/scored ICM-CAGs, how they relate to the development of individualized care plans, and how physicians can use this information to better treat their patients.

Understanding how to interpret the simple, color-coded ICM-CAG will:

1. Provide new and important information to physicians about patients receiving ICM assistance.
2. Allow them to help their patients derive value from the support services of their ICM manager.
3. Lead to adjustments in their own treatment planning based on additional clinical and non-clinical data.

The ICM-CAG (Table 6.3) is a multidomain comprehensive complexity assessment designed to uncover health-related and non-health-related life circumstances that interfere with a patient's ability to stabilize their health, i.e., risk factors that predict poor outcomes. Each domain (bio—"B," psycho—"P," social—"S," and health system "HS") contains five complexity (risk) items: two historical ("H"), two current ("C"), and one vulnerability ("V"). The lettered notations allow use of shorthand to talk or write about the complexity item, e.g., Chronicity = HB1 (historical, biological, first item), Social Support = CS2 (current, social, second item).

Each ICM-CAG item is "anchored" (scored) on a Likert scale from "0" to "3." Anchor points for the items can be found in Appendix B. During development of the complexity grid and thereafter, researchers from nine countries in Europe went to extensive effort to establish and confirm reliability [9–11] for the scores of each item and the total instrument's construct validity [12–19]. Further, the ICM-CAG has matured with time so that there is now a self-assessment version [19], versions usable in the elderly [11, 19], and, most recently, a version for children and youth [20].

Initial researchers on the ICM-CAG developed score anchors for each item with the intent that they would lead to potential actions by the patient, the ICM manager,

Table 6.3 Integrated case management-complexity assessment grid (ICM-CAG)

Date	Health risks and health needs					
Name	**Historical**		**Current state**		**Vulnerability**	
Total score	Complexity item	Score	Complexity item	Score	Complexity item	Score
Biological Domain	Chronicity (HB1)		Symptom severity/ impairment (CB1)		Complications and life threat (VB)	
	Diagnostic dilemma (HB2)		Diagnostic/therapeutic challenge (CB2)			
Psychological Domain	Coping with stress (HP1)		Treatment adherence (CP1)		Mental health threat (VP)	
	Mental health history (HP2)		Mental health symptoms (CP2)			
Social Domain	Job and leisure (HS1)		Residential stability (CS1)		Social vulnerability (VS)	
	Relationships (HS2)		Social support (CS2)			
Health System Domain	Access to care (HHS1)		Getting needed services (CHS1)		Health system impediments (VHS)	
	Treatment experience (HHS2)		Coordination of care (CHS2)			

Table 6.4 Anchor points for mental health symptoms (CP2)

0. No mental health symptoms
1. Mild mental health symptoms, such as problems with concentration or feeling tense, which do not interfere with current functioning
2. Moderate mental health symptoms, such as anxiety, depression, or mild cognitive impairment, which interfere with current functioning
3. Severe psychiatric symptoms and/or behavioral disturbances, such as violence, self-inflicted harm, delirium, criminal behavior, psychosis, or mania

the patient's clinicians, and/or other stakeholders in the patient's health outcome. This is called "clinimetrics" rather than "psychometrics" since scores translate directly into clinical assistance. For instance, the anchor points for Mental Health Symptoms (CP2) can be found in Table 6.4. A score of "0" indicates that there are no problems with mental health issues. Thus, there are no potential actions for the ICM manager and others involved in the patient's care (Table 6.5); whereas, scores of "1" to "3" indicate progressively more serious difficulties and increased imminence for need of action. In a patient with a score anchored at "3," a wide variety of potential assistance activities in the near future would be considered in the patient's care plan. Anchor point actions associated with CP2 and other complexity items can be found in Appendix O.

Close inspection of the actions associated with complexity items reveals that none involve "treatment" by the ICM manger. ICM managers do not treat patients. They assist patients through "care" plans, not "treatment" plans. On the other hand, many item-related ICM actions include assist activities that foster treatment adherence, measurement of targeted clinical and functional outcomes, and working with

Table 6.5 Potential ICM manager actions related to mental health symptoms anchor points (CP2)

1. *Mild mental health symptoms*: ensure primary care treatment with stepped access to support from mental health professionals; ensure unfettered access to physical and mental health records by all the treating clinicians
2. *Moderate mental health symptoms*: Perform appropriate actions under #1; ensure that acute, maintenance, and continuation treatment is being provided by primary care physicians with mental health support and backup; facilitate primary maintenance and continuation treatment provided by primary care physician (medical home) with mental health specialist assistance, i.e., a psychiatrist and mental health "team" (psychologists, social workers, nurses, substance abuse counselors, etc.) when condition destabilizes, becomes complicated, and/or demonstrates treatment resistance; assist with instituting symptom documentation recording system, such as, PHQ-9, GAD-7, etc.; ensure that the crisis plan is available
3. *Severe psychiatric symptoms and/or behavioral disturbances*: Perform appropriate actions under #1 and #2; include customized actions based on interview; support active and aggressive treatment for mental conditions by a mental health team working in close collaboration with primary care physicians, who care for concurrent physical illness; facilitate use of geographically co-located physical and mental health personnel to improve the coordination of treatment; confirm persistent symptom documentation recording system, such as, PHQ-9, GAD-7, etc.; ensure physical and mental health treatment adherence

the patient's clinicians and/or the ICM medical director if improvement is not occurring and escalation of care may be necessary.

In addition to directly promoting physician recommendations, other ICM manager actions target non-clinical barriers to improvement, such as finding funding for medications, helping to find safe housing, connecting the patient with a food bank, or coordinating clinician communication. Reversing non-clinical barriers is often the stimulus for patient adherence to clinical treatment recommendations. For instance, a patient with a poor support system may miss follow-up appointments. Thus, helping a patient find community support resources could improve her/his clinical outcome through better adherence.

With the exception of Mental Health History (lifetime) and Access to Care (last 6 months), anchoring of historical items is related to the last 5 years in adults. Current item scores reflect what has been happening during the last 30 days. Vulnerability is anchored based on the anticipated outcome during the following 3–6 months if ICM management was discontinued.

At the outset of the ICM assessment, the ICM manager uses a scripted dialogue (Appendix C) to anchor complexity items and complete the ICM-CAG. Thus, the dialogue is presented as a "discussion" with the patient that is divided into seven overlapping content areas (Table 6.6). For example, the patient-ICM manager conversation may begin with the statement: "Tell me about yourself," and the ICM manager may glean information pertinent to scoring several ICM-CAG cells while building rapport with the patient. The ICM manager will be working with the patient for weeks to months. Particularly during the initial evaluation, ICM managers strike a delicate balance between obtaining necessary information and demonstrating compassion and understanding. Unless patients believe that ICM managers care about them and their well-being, the potential for change deteriorates.

Table 6.6 Content areas and open-ended initial scripted questions for adults

- *General life situation* (1): Can you tell me about yourself, such as where you live, who you live with, how you spend your days, what your hobbies and interests are?
- *Physical health* (2): How is your (name main medical illness) affecting you today?
- *Emotional health* (3): How do you feel emotionally, such as worried, tense, sad, or forgetful?
- *Interaction with treating practitioners* (4): Can you tell me who you see for your health problems?
- *Health system issues* (5): Can you tell me whether you have difficulty in getting the healthcare you need?
- *More sensitive personal information* (6): What kind of a person are you, such as outgoing, suspicious, tense, or optimistic?
- *Additional information from patient* (7): What things did I not ask about that you think are important?

The interchange allows a flexible flow of inquiry with the potential for the ICM manager to express empathy and spend time understanding the patient's personal and family issues in addition to illness-related facts. Since it is a dialogue, the conversation is allowed to flow naturally. At the completion of the initial phase of the dialogue, the ICM manager can come back to "missed" items of importance by reviewing the ICM-CAG and connecting items needing scoring with additional scripted open-ended questions.

Finally, the scripted dialogue closes with a request for the patient to give the ICM manager one personal clinical and one personal functional goal that they would like to work toward with the help of the ICM manager as well as their current level of satisfaction with their healthcare and quality of life. These will become the baseline for ongoing health outcome targets, documented in the PCIP, during the course of ICM. It is through personal goals that the patient becomes engaged in the care plan. Satisfaction and quality of life are complementary patient-centered outcomes of importance, core to ICM practices.

Scored items can be entered into the color-coded complexity grid with accompanying notes using ICM software or alternative ICM tools. These should provide a visual that can be shared with and quickly interpreted by patients and their practitioners using the "Understanding Complexity Assessments" explanation sheets (Appendices P and Q). Patients and clinicians may use the ICM-CAG as a tool for reviewing where challenges lie and where assistance might start. The color-coded ICM-CAG's interpretation is intuitive for most. It does not take long to engage the patient, their caregivers, and providers in the next steps.

Since the complexity items are action-oriented, the ICM-CAG can be directly translated into prioritized goals and actions in the form of a written plan of care based on the level of vulnerability and need. At this stage, the treating practitioner's role is to understand the findings reported on the ICM-CAG, to encourage patients to collaborate with the ICM manager, and to stay abreast of progress or failure, contributing to improved outcomes as needed.

Physician Understanding of the ICM Domains

Biological Domain

The Biological Domain targets identification of barriers to improvement related to biomedical conditions. This is the most common focus of assessment and intervention for traditional case management sponsored by non-BH management services. BH management services alternatively target mental health and substance abuse issues found in the Psychological Domain. Table 6.7 summarizes the type of risks and ICM outcome objectives that case managers uncover and address through ICM in this domain. All items within the Biological Domain pertain *only to medical conditions* with the exception of the item titled Diagnostic/Therapeutic Challenges (CB2). For this item, anchoring of a “3” indicates that there is likely one or more non-medical contributor to the persistence of medical symptoms that needs to be addressed, such as depression or treatment non-adherence, in order for the patient to have a successful “medical” recovery.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the Biological Domain (Appendices B and O).

Table 6.7 Biological domain

- Chronicity (HB1—last 5 years)
  - Risk—presence of chronic medical conditions
  - CM outcome objective—illness understanding and treatment engagement; consistent and coordinated care
- Diagnostic dilemma (HB2—last 5 years)
  - Risk—inconsistent or inappropriate treatment
  - CM outcome objective—medical diagnosis clarification and targeted treatment
- Symptom severity/impairment (CB1—last 30 days)
  - Risk—uncontrolled illness or unnecessary impairment
  - CM outcome objective—stabilized illness and maximum function
- Diagnostic/therapeutic challenge (CB2—last 30 days)
  - Risk—complicated, invasive, costly, or painful tests or interventions; non-medical contributions
  - CM outcome objective—least complicated, invasive, costly, and painful medical tests and interventions; non-medical contribution reversal; stabilized health
- Complications and life threat (VB—next 3–6 months)
  - Risk—poor medical outcome if CM withdrawn
  - CM outcome objective—stabilized physical illness; successful patient self-management

Table 6.8 Psychological domain

- Coping with stress (HP1—last 5 years)
  - Risk—non-productive problem-solving capabilities or handling of stress
  - CM outcome objective—stress reduction; improved problem-solving strategies
- Mental health history (HP2—lifetime)
  - Risk—history of mental health symptoms associated with impaired function
  - CM outcome objective—mental health support and necessary follow-up
- Treatment adherence (CP1—last 30 days)
  - Risk—poor assessment and treatment adherence
  - CM outcome objective—documented adherence with improved health
- Mental health symptoms (CP2—last 30 days)
  - Risk—presence of mental health symptoms/conditions
  - CM outcome objective—mental condition stabilization; appropriate level of care
- Mental health threat (VP—next 3–6 months)
  - Risk—poor coping, adherence, mental health outcomes if CM withdrawn
  - CM outcome objective—independent ability to handle stress and solve problems, adhere to treatment, and have stabilized mental health symptoms

Psychological Domain

The Psychological Domain does not just assess for BH conditions. Rather, it targets identification of barriers to improvement related to the patient's coping skills, their mental health history and current symptoms, and their willingness to engage in treatment recommendations. Table 6.8 summarizes the type of risks and ICM outcome objectives that ICM managers uncover and address in this domain.

The Coping with stress (HP1) item evaluates the patient's ability to identify and solve challenges and deal with stress in their lives. For instance, when this indicator of resiliency is impaired, high scores during assessment may expose use and abuse of recreational substances or alcohol as a means to cope with stress. Treatment Adherence (CP1) assesses the patient's adherence to treatment recommendations but also attempts to identify and reverse the reasons for non-adherence (Appendix R). This item is often connected to other risk items in the care plan as a result. *Treatment adherence is intended to assess what the patient does, not what she/he says*. Thus, if the patient is not following through on a treatment program even with an expression of willingness to do so, CP1 would be scored "2" or "3" since actions belie what the patient says.

Historical and current mental conditions are recorded using the Mental Health History (HP2) and Symptoms (CP2) items. Along with Barriers to Coping, these two items are commonly omitted from evaluations in traditionally "medical model" case management programs, whereas they are often the focus of attention in "behavioral" case management programs while "biological" items are excluded. When issues, such as depression are identified in patients participating in "medical" case management programs, patients may be transferred to BH managers for assistance.

Table 6.9 Social domain

- Job and leisure (HS1—last 5 years)
  - Risk—financial instability and non-productive personal initiatives
  - CM outcome objective—employment/school and productive leisure activities
- Relationships (HS2—last 5 years)
  - Risk—impaired interpersonal skills
  - CM outcome objective—improved interactions with family, friends, colleagues
- Residential stability (CS1—last 30 days)
  - Risk—unstable or unsafe living situation
  - CM outcome objective—safe and stable living environment
- Social support (CS2—last 30 days)
  - Risk—lack of personal support during times of need
  - CM outcome objective—developed support system
- Social vulnerability (VS—next 3–6 months)
  - Risk—worsening social situation and support if CM withdrawn
  - CM outcome objective—stable social support, living situation, job, personal interactions if CM withdrawn; self-management

The reverse is true for those in "behavioral" programs. Unfortunately, patients commonly don't or aren't able to follow through, despite referral [21, 22]. This is the reason that ICM trains case managers with medical or BH backgrounds to assist with cross-disciplinary issues without handoffs.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the Psychological Domain (Appendices B and O).

Social Domain

The Social Domain (Table 6.9) targets identification of barriers to improvement related to life circumstance factors that help a person to navigate adverse health events when they arise. Job and Leisure (HS1) assesses whether the patient has economic stability and/or productive life activities. Relationships (HS2) review the patient's historical ability to form and maintain friendships, whether with family or in other social settings. Residential Stability (CS1) and Social Support (CS2) assess the patient's current living situation and support system. All of these directly or indirectly indicate resources that may be available to a patient whose health was compromised or unexpectedly deteriorated. For instance, a middle-aged unemployed and homeless male with diabetic foot ulcers, who only has drinking buddies (HS1 score "3"), is unlikely to be able to follow through on sterile foot care as an outpatient. Without ICM manager help (Social Vulnerability [VS]), he is at great risk for further complications and potential foot amputation.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the Social Domain (Appendices B and O).

Table 6.10 Health system domain

- Access to care (HHS1—last 6 months)
  - Risk—poor system-based access to appropriate care
  - CM outcome objective—insurance coverage; access to needed providers (language, culture, location, etc.)
- Treatment experience (HHS2—last 5 years)
  - Risk—mistrust of doctors; adverse experience with care, e.g., drug reaction
  - CM outcome objective—resolved mistrust issues; identified acceptable providers
- Getting needed services (CHS1—last 30 days)
  - Risk—logistical inability to get needed services
  - CM outcome objective—access to money for meds, transportation, referrals, etc.
- Coordination of care (CHS2—last 30 days)
  - Risk—non-communication and collaboration of providers; iatrogenic worsening
  - CM outcome objective—connection among providers (transitions of care); coordinated care
- Health system impediments (VHS—next 3–6 months)
  - Risk—poor access to and/or coordination of care if CM withdrawn
  - CM outcome objective—persistent access to and receipt of needed and coordinated services

ICM Health System Domain

The Health System Domain (Table 6.10) targets identification of barriers to improvement related to the financing and delivery of care (care complexity) rather than the patient's illnesses themselves (case complexity). In the United States, non-existent insurance coverage or coverage that still makes it a challenge to find needed providers, such as low paying medical assistance or Medicaid, is a major impediment to health (Access to Care [HHS1]). While this and other factors contributing to access problems, such as distance from services (rural medicine) or language, should improve with passage of the Affordable Care Act (ACA), ability to find a qualified physician willing to follow a patient longitudinally will remain a challenge for some years.

Few case management programs assess a patient's trust of doctors or prior experience with delivered medical services (Treatment Experience [HHS2]). Since this is a potential contributor to non-adherence and poor outcomes, it is included in this domain. Getting Needed Services (CHS1), unlike HHS1, refers to logistic challenges that the patient may face in getting needed services or following through on treatment recommendations. For instance, patients with low socioeconomic status may take half of a prescribed dose of an expensive medication to save money. Such practices, unbeknownst to the physician but based on financial hardship, may appear to the treatment team as uncontrolled hypertension or poor adherence to diabetes mellitus treatment. Increasing medication doses, in these situations, will have little effect since financial shortfall predicts continued inadequate dosing and poor control.

Coordination of Care (CHS2) attempts to compensate for care fragmentation in the health system. Assistance with care transitions, such as from the inpatient to outpatient setting, is included under this complexity item. Additionally, this item encourages communication between medical and BH professionals; discourages unnecessary and/or duplicative tests, procedures, and consultations; and fosters open health record access for all treating providers. Having an ICM manager to connect non-communicating providers can facilitate true improvement of total health. CHS2 differs from CHS1 "coordination" since CHS2 refers to coordination and collaboration among *providers*, whereas, CHS1 refers to coordination of actual services provided, e.g., location convenience, non-conflicting appointments, etc.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the Health System Domain (Appendices B and O).

Physician Understanding of an ICM Care Plan

An anchored ICM-CAG is the roadmap from which ICM managers build their care plans. An example of how this occurs, using the CP, CPO, and PCIP, was illustrated in Chapter 4. Even before these planning tools are completed, however, the scripted interview allows ICM managers to identify measurable personal clinical and functional goals. A patient's goals are almost always connected to the ICM manager's and treatment team's goals. Thus, establishing and using the patient's goals as a starting point creates ownership and engagement by the patient. The patient and the ICM manager then work together toward a common objective.

After the patient has identified her/his goals, it is then time to vet the accuracy of the assessment, to clarify misunderstandings, and to establish a place to start. Using the anchored color-coded ICM-CAG is ideal for setting this process in motion. It is easy to understand with minimal instruction (Appendices P and Q) and can be employed with both the patient and the patient's clinical team. Further, the physician should be informed of the patient's goals so that all will be working for a patient-centered purpose. Other prioritized goals should be developed and shared with all stakeholders when input is sufficient to allow the writing of a plan of care.

When the ICM manager, in collaboration with the patient, completes the care plan, physicians may find it helpful to discuss findings on the ICM-CAG directly with the patient. Such a discussion may help clarify previously unknown issues related to care and help the patient recognize that the physician and ICM manager are a cohesive unit. Ways in which the physician may be additionally helpful for the patient may also be illuminated, possibly enhancing trust and engagement in the care plan.

Physician Understanding of the ICM Management Process and Patient Graduation

Much like the diagnosis and treatment of disease, ICM is an iterative process designed to overcome identified barriers to improvement. As previously discussed, barriers to improvement are clinical and non-clinical health and life circumstances that are associated with impairment of a person's ability to adhere to healthy behaviors or to follow through on activities that lead to stabilized health and maximal function. In a true sense, physicians and ICM managers are partners in the healing process. They just address different aspects of patient challenges in achieving health.

Completion of the ICM-CAG is a starting point for patient assistance and often does not focus on biomedical factors as the place to launch. This is because non-clinical factors frequently prevent a patient from following through on clinical evaluations and treatment recommendations. The ICM-CAG is able to capture and prioritize non-clinical factors in the context of clinical factors for which primary responsibility rests with treating physicians. Importantly, the ICM-CAG identifies areas in the patient's situation that need action. Findings on the ICM-CAG should be of interest to all treating physicians.

For instance, a physician who had been working with ICM managers for some time noticed that a long-term patient with cystic fibrosis was having considerably more challenges in controlling her illness during the previous several months. Initial attempts at reinforcing pulmonary toilet procedures and medication adherence did not seem to alter her condition. An ICM manager was assigned and able to identify that the patient had depressive symptoms (CP2) and was also preoccupied with providing health support for her sick mother (CS2). As a result, she was not following through on the percussion and drainage or using her inhaled medications as recommended for control of the cystic fibrosis.

The patient had been seen in the emergency room several times during the previous month and was admitted on one occasion with pneumonia. While the physicians involved in her acute care attempted to reinitiate appropriate medical treatment, it was not until after the case manager helped the patient set up support services for her mother and shared information about contributing depressive symptoms with the patient's doctor (who initiated treatment) that steady improvement of the patient's lung disease was possible. This example shows how ICM managers can support simultaneous attention to medical and BH aspects of treatment, as well as clinical and non-clinical barriers to care, leading to improved health outcomes.

The CP (Appendix F), a gradually maturing plan of care, and the CPO (Appendix G), a timely appraisal of success in improving outcomes for items listed on the CP, are an ongoing record of actions taken by or on behalf of patients and their success in focal goal achievement. Examples can be found in Tables 4.8 and 4.10. These instruments document progressive management activity being supplied to the patient.

The CP starts with items on the ICM-CAG that have been documented to have high priority (scored 3 [red]). Sometimes "red" items are connected to items in other cells with lower scores, such as when a person has serious acute manifestations of her/his medical illness due to lack of adherence to indicated interventions ("red" on CB1 and "orange" on CP1). ICM assessment may also uncover a comorbid mental health condition that has remained untreated. While the mental health condition may be low grade (scored as "yellow"), it nonetheless could be a significant contributor to non-adherence and poor medical improvement.

In the above scenario of the patient with cystic fibrosis, CB1, CP1, CP2 are connected as an area of ICM intervention. The initial goal might be "absence of depression" by assuring that outcome-changing treatment for depression is provided either by the primary care physician or a mental health professional. The long-term goal would be "stabilization of the patient's chronic medical condition."

The CPO merely adds a third column to the CP, i.e., an outcome column. This allows the ICM manager to periodically return (days, weeks, or months depending on the desired goal) to the CP initiative and assess whether the initial goal and then the long-term goal have been achieved. Of course, the ultimate goal of stabilized health in the case described above may also require further testing, adjustments of medications, finding specialist assistance, or improving communication among practitioners. That is why the CP is iterative and incremental. When directed actions have not achieved desired goals, then the next steps are taken as part of an updated care plan or goals and expectations are adjusted.

The ICM manager uses the CP and CPO to systematically move from high-priority barriers to improvement to less serious ones until the patient is considered sufficiently stable to return to standard care. This is called "graduation" from ICM. At the time of graduation, the ICM manager reinforces with the patient, in coordination with the patient's clinicians, the application of personal initiative and preventive measures that support self-sufficiency in a standard care environment.

Graduation, alternatively called "becoming inactive in ICM," is a time of high vulnerability for the patient. By this time, the ICM manager and patient have developed a relationship. The patient appreciates the benefit from ICM manager assistance and is reluctant to lose this source of support. Thus, ICM places special emphasis on the steps that need to be taken in transitioning from active ICM to standard care. This involves preparing patients for the transition by congratulating them on their success and going over the steps that they and their primary physicians will continue to monitor in the future. It is during this time that treating clinicians are also informed of imminent graduation and are given copies of the initial ICM-CAG, a current state ICM-CAG, the final PCIP, and a summary of areas of challenge for the patient as they return to standard care.

The PCIP (Appendix S) is an evaluation of the longitudinal "big picture" as patients progress through ICM assistance. It monitors and records measured changes in five major areas of outcome interest. An example of a completed adult patient PCIP can be found in Table 4.12. It is the PCIP that demonstrates the overall success for the patient through ICM intervention. Further, it can be used to record the success of the ICM program for a sponsoring organization/company. Composite outcomes can be standardized, aggregated, and then analyzed for individual ICM managers and for the program as a whole.

Physician and ICM Manager Synergy

ICM is intended to augment clinical treatment from a physician by assisting in health and life circumstances that interfere with patients' ability to improve and stabilize their health. Treating physicians maintain a focus on clinical evaluation and treatment. Physicians working with patients having an ICM manager, however, have the advantage of quick access to information not typically included in standard medical assessments as well as intervention capabilities for circumstances that impede treatment outcomes.

To the extent that the physician and ICM manager see themselves as a team for the patient, physicians will incorporate into their treatment plans an improved understanding of non-clinical factors affecting their patients' health outcomes that have been uncovered through the ICM assessment process. For instance, knowing that a patient is not taking full doses of needed medications due to financial challenges allows a physician to consider cheaper generic alternatives or to seek medication cost support programs rather than simply increasing the dose of an expensive medication on the presumption that the current dose is insufficient to effect change. It is through enhanced information sharing that improved outcomes can be achieved.

On the ICM manager's side, it is necessary for the treating physicians to support and encourage engagement in the ICM program. Support comes in the form of clinical information sharing and communication with the ICM manager. Perhaps more important than this, however, is the endorsement that the physician gives to the program from the eyes of the patient. Patients respect their physicians and look to them for guidance in the types of activity they should pursue in an effort to maximize health. To the extent that patients understand that their physicians and ICM managers are working as a team on their behalf, they are much more likely to invest in the time and effort needed for health improvement to occur.

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Chapter 7

Indirect and Direct Physician Support for Integrated Case Management in Children/Youth

"Good design is making something intelligible and memorable.
Great design is making something memorable and meaningful."

—Dieter Rams

Chapter Objectives

- *To share the current status of management procedures available for children/youth.*
- *To discuss child/youth and family triage procedures.*
- *To describe what physicians need to know about the PICM-CAG, its anchor points, and the anchored PICM-CAG's relation to the development of care plans.*
- *To clarify primary care, behavioral health, specialty care, and insurance plan Medical Director practitioner roles and opportunities in working with low complexity, moderate complexity, and high complex children/youth when using PICM.*
- *To illustrate how PICM fits very well into pediatric-based patient-centered medical home programs.*

This chapter will build on the principles, definitions, and descriptions that are reviewed for adults in Chapter 6. The overall goal of this chapter is to assist physicians and other treating professionals interested in medical and BH care for children and youth to understand the application of case management, and specifically PICM, to this population. The intent is to help clinicians working with children/youth and their families maximize health improvement, create a therapeutic environment that maintains health stability, and, in so doing, reduce the need for use of healthcare services.

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Current Case Management Programs for Children/Youth: Care Coordination

Case management, as it applies to children/youth, is more complex compared to adults due to many factors. The first and most obvious relates to the number of people who are included in its delivery. Not only is there child/youth, but there are also the parents/guardians, teachers, and peers who implicitly and explicitly influence whether the care delivered will be effective and, if so, in what way. As was pointed out in Chapter 5, each of these stakeholders in the child/youth's health has his/her own issues that need addressing as evaluations are performed and treatments are given. Case management with children/youth is even more complex due to the necessary involvement of schools, daycare, community resources, and even the juvenile justice system. Finally, and perhaps most importantly, children are not independent agents. Decision-making is assumed or strongly influenced by the child/youth's parents/caregivers or other connected individuals depending on the age and situation of the child/youth.

Added to the complicated network of contributors to child/youth evaluation and treatment is the ambiguity of terms that accompanies existing case management programs and activities. Unlike for adults, the authors of this book have been unable to find a systematic approach to comprehensive case management for children/youth. Focal case management models are limited in children/youth, such as disease management [1] and discharge management [2], in the pediatric sector. Most assist and support programs for children/youth center on education about health issues related to adapting to a health condition or understanding the care process.

The most common, and most widely published, case management model used in pediatrics, often associated with pediatric medical homes, is called "care coordination" [3–7]. Care coordination is defined as the "deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of healthcare services" [8]. It includes the components listed in Table 7.1 but has a wide variation in application, even in practices in which a dedicated care coordinator is present [6].

In a strict sense, care coordination in its broad description would be considered a form of case management. It is patient-centered and collaborative, assesses health aspects of children/youth, strives to build an effective care plan, coordinates care, and attempts to improve health and cost outcomes (see Table 1.2). Further, it includes core components of the case management process (see Table 1.3). However, most current care coordination programs focus on the "coordination" of care delivery, rather than additionally addressing barriers to improvement. They rely on the biomedical clinical evaluation by physicians to identify patient needs, as opposed to a comprehensive evaluation that also includes social and health system-related factors that may impact health even more than the biomedical aspects. The assistance procedures usually are invoked by the physicians directly involved in the child/youth's care who may have little time or expertise to conduct care coordination activities well [4]. While care coordination is commonly used for children with special healthcare needs (CSHCNs), in actuality studies suggest that the majority of those exposed do not have chronic conditions [4].

Table 7.1 Coordinated care

- Care is patient and family centered—patient's and family's needs and preferences are fully known and accommodated to the highest level possible
- Needed information is effectively gathered and shared across multiple sites of care, specialty providers, health systems, and community agencies
- Children/youth with special healthcare needs are reliably identified and encouraged to participate in the coordinated care program
- A care plan to link specialists, care services, and resources is created and updated on a regular basis
- Addresses all aspects of the child/youths' care needs—biophysical, behavioral health, social, and health system components
- There is a dedicated team of clinic staff members to provide coordinated care—physician, nursing, and administrative support personnel
- Proactively provides support, education, and assistance to families in connecting with needed services
- Has reliable communication and coordination policies and procedures in place
- A comprehensive list of community resources is created and updated on a regular basis
- Communicates and coordinates with a child/youth's educational, child care, and other systems and/or community agencies

In defined pediatric care coordination, the primary care physician, whether a pediatrician or family medicine doctor, working in the child/youth's medical home, takes on the role of the "case manager," although she/he works closely with her/his existing clinic-based team to facilitate needed connections on behalf to the children/youth served [4]. Ideally, a nurse or social worker may be added for dedicated care coordinator work within the PCMH, but PCMHs may be unable to support a professional dedicated to care coordination due to resource constraints, and in practice activities associated with her/his presence vary widely [6]. In most pediatric programs, care coordination does not require nor use nurses or social workers trained in case management nor does it necessarily address behavioral and non-clinical aspects of the child/youth or family situation that may be contributing to poor outcomes. Traditionally, pediatric care coordination is primarily about improving the communication and handoff process related to biomedical issues for identified children/youth, though a recent review suggests that value-added trends are evolving [6].

Care coordination has demonstrated value, especially for CSHCN [3, 4, 6, 9]. Further, it meets a major need within pediatric medical homes, i.e., having a way to ensure that communication among practitioners occurs and that transitions among providers and locations of care are smooth and coordinated. A recently published review of national care coordination programs in which dedicated care coordination staff were uniformly present indicates that a number of programs are moving beyond mere coordination activities and adding what are considered value-added "proactive" care procedures (Table 7.2). These proactive procedures are more consistent with activities found in PICM, but their presence is by no means uniform or necessarily encompassing of activities that could potentially bring value. Furthermore, PICM is unique in offering a systematic approach for comprehensively evaluating, identifying, and addressing barriers to improvement for children/youth and their families that may be implemented within programs seeking to provide value-added case management.

Table 7.2 Proactive procedures in evolving care coordination

1. Pre-visit phone calls to get updates, assess needs, and set visit agendas
2. Written care plans of health summaries
3. Preparing for complex patients by prior chart review or scheduling longer visits
4. Performing "huddles" among the care team to discuss the child/youth
5. Organizing family-oriented materials, e.g., care transition needs, special education

Data from Van Cleave J, Boudreau AA, McAllister J, Cooley WC, Maxwell A, Kuhlthau K. Care coordination over time in medical homes for children with special healthcare needs. Pediatrics. 2015;135(6):1018–1026

Case Management Triage for Child/Youth Complexity

As described in Chapter 3 (see Table 3.1), the Maternal and Child Health Bureau discretely defined Children with Special Healthcare Needs (CSHCNs) using the number, type, and impact of chronic illnesses experienced by a child/youth. Further, there are a number of studies that document the ease with which classification of children/youth into this category can be performed [10]. Based on prior studies, about 13–19 % of children/youth will be classified as CSHCNs depending upon the population from which assessments are performed [3, 10]. An alternative would be to use an ICD-9-based algorithm (see Table 3.2) to identify those with complexity using an administrative database approach, as suggested by the Center of Excellence on Quality of Care Measures for Children with Complex Needs (COE4CCN) [11]. Using this methodology, it should be possible to identify a subset of high need C-CD (see Table 3.2) patients of approximately 7 %. Regardless, identifying those with CSHCNs or C-CD is a good place to start in the triage process for children/youth with complexity since those identified in these categories will predictably have impaired outcomes and higher total healthcare cost.

Physician Understanding of PICM-CAG Anchoring and Its Relationship to Care Plan Development

Similar principles and practices for integrated case management described for adults are true for children/youth. The comprehensive multidomain assessment informs prioritization in the development of a care plan. The care plan for the child/youth and family is associated with iterative assistance and support by the case manager in collaboration with the child/youth and family, the child/youth's clinicians, and the ancillary stakeholders in the child/youth's outcomes. Outcomes are measured related to the care plan in real time, and approaches to assist and support services are adjusted until goals are attained, stabilization has occurred, or maximum benefit is achieved.

As with adult ICM, a pediatric PCIP informs clinical, functional, satisfaction, quality of life, and economic outcomes as management assistance is given, and it is periodically updated until the child/youth and family are ready for graduation. Unlike adult ICM, PICM includes documentation of goals from both the child/youth (presuming she/he is at an age that meaningful goals can be determined) and the parent/caregiver, in addition to those chosen by the case manager. This ensures that all participants have reasons to take active steps to improve health and function. As part of the PCIP, baseline PICM-CAG scores, satisfaction, quality of life, and economic indicators of interests are included.

Differences Between the ICM-CAG and the PICM-CAG

As with the ICM-CAG, the PICM-CAG leads to a color-coded assessment output in the form of a grid (see Tables 3.3, 3.7, and 3.8) that disentangles risk items contributing in varying degrees to poor health and cost outcomes. Consistent with the integrated case management approach, the PICM-CAG is divided into four domains (biological ("B"), psychological ("P"), social ("S"), and health system ("HS")). Each domain contains historical ("H"), current ("C"), and vulnerability ("V") items, but additional items are present in the pediatric grid to address risk content specifically pertinent to children/youth. For convenience, lettered notations, e.g., CS4 (current, social, 4th item), provide simple terminology for those using the PICM-CAG frequently to talk and write about individual complexity items. For instance, CS4 represents school and community participation in the pediatric grid.

Risk items are "anchored" (scored) on a "0"–"3" Likert scale based on the level of risk they pose to the child/youth. Low scores have little/no risk, and high scores indicate risk and need for action. Each number is associated with a traffic light-like color designation, i.e., "0" equals green, "1" yellow, "2" orange, and "3" red. Unlike the adult grid for which significant preliminary research has documented ICM-CAG construct validity and interrater reliability [12–19], the PICM-CAG has not been tested or validated. It was adapted from the conceptual framework and procedures used to make the adult grid with the addition of expertise from clinicians. The original 20 adult items were rewritten to make them pertinent to children/youth, and several risk areas were added reflecting aspects of life and healthcare that are specific to the pediatric population.

The PICM-CAG, thus, awaits validation studies to be certain that it is able to identify complexity with the same degree of consistency and pertinence that the adult complexity grid does. When the INTERMED complexity assessment technology was being transferred from its European home to the USA, it was apparent that without a pediatric equivalent to the ICM-CAG, many children/youth with health complexity would miss the opportunity to benefit from proactive uncovering and assistance with early life barriers to improvement. For this reason, a decision was made to create a child/youth grid using parallel development processes that would carry with it the potential for generalization from adult validation results to the pediatric grid. It is anticipated that the PICM-CAG will undergo comparable validation to the adult grid as it is used to assist children/youth. Adjustment in its content will then be made based on findings.

By introducing an unvalidated PICM-CAG built using validated ICM-CAG technology, it was reasoned that children/youth would not be denied potential benefit from its use while validation was performed. There is not an equivalent tool for children/youth in healthcare today that disaggregates actionable barriers to improvement and connects them to assistance and support procedures, even when including care coordination programs. The PICM-CAG offers an untested but theoretically helpful health enhancement process.

The PICM-CAG has the same practical usage characteristics as the ICM-CAG:

- A scripted family-centered interview is used to anchor PICM-CAG item scores.
- The individual items represent areas in need for action if they are scored “2” or “3.”
- The total PICM-CAG scores reflect health complexity in children/youth.
- Outcome documentation is core to the assist and support process.
- When goals are not being reached, iterative escalation in assistance and intervention procedures are expected.
- Graduation to independent family-based management associated with standard care is the ultimate goal.

As an example, if a child/youth is anchored with a score of “2” for CS4 (Table 7.3), this indicates that the child/youth is missing much schooling or has nonproductive school activities. Based on this anchored score, several actions would be considered by the PICM manager (Table 7.4).

As with adults, during the course of the PICM manager’s assessment dialogue with the child/youth and family, the score for CS4 also may be related to scores for other risk items that indicate a need for action such as CP2, untreated separation anxiety; HS2, inability to make and nurture peer relationships; and CHS1, no referral by the pediatrician for assistance from child/youth psychological services. Thus, as the PICM manager is creating the care plan, items CS4, CP2, HS2, and CHS1 may be associated with a goal of “productive school participation” and accompanied by assistance and support actions that address contributions from each of the connected risk items associated with the child/youth’s school participation, including encouraging referral to BH specialists for treatment of anxiety if indicated.

Table 7.3 PICM-CAG social: current state (CS4)
School and community participation—anchor points

0.	Attending school regularly, achieving and participating well, and actively engaging in extracurricular school or community activities, e.g., sports, clubs, hobbies, religious groups
1.	Average of 1 day of school missed/week and/or minor disruptions in achievement and behavior with few extracurricular activities
2.	Average of 2 days or more of school missed/week and/or moderate disruption in achievement or behavior with resistance to extracurricular activities
3.	Truant or school nonattendance with no extracurricular activities and no community connections

Table 7.4 PIM-CAG social: current state (CS4)
School and community participation—action

1. *Missing up to 1 day of school/week and few extracurricular activities*—explore interests, hobbies with the child/youth and encourage initiation of activity; involve caregiver/parent in assisting child/youth to attend school more regularly and develop peer activities
2. *Missing average of 2 or more days of school/week with resistance to extracurricular activities*—assess reasons for resistance with child/youth, caregiver, and school; clarify school's understanding of child/youth health needs; assess reasons for peer activity nonparticipation, including health of child/youth; share information with pediatrician; collaborate with caregiver, educators, child/youth, and care providers in developing a remedial plan
3. *School nonattendance with no extracurricular activities or community connections*—immediately perform actions under #1 and #2; include customized actions based on interview; explore alternative ways to interact with peers; consider case management conference with caregivers, school personnel, pediatrician, mental health professionals, others and work with them on potential solutions; follow-through on initiated activities

All historical items in the PICM-CAG are related to the child/youth's entire life, not the last 5 years as with adults, with the exception of "access to care" which targets the previous 6 months. All current items refer to the 30 days prior to the PICM assessment. Vulnerability variables refer to the 3–6-month period if PICM assistance and support were withdrawn.

Prior to starting the PICM process, children/youth, depending on age, and their family members may be prepared by reviewing the documents "Understanding 'Complexity Assessments'" (see Appendices K and L). These documents help patients and families understand the ultimate goal of the assessment process. The scripted interview contains the same seven content areas included in the adult scripted interview, but is segmented into questions for both the child/youth and parent/guardian, questions for the parent independent of the child/youth, and questions for the child/youth independent of the parent. Special attention to ages of majority for children/youth and confidentiality is necessary when working with adolescents, especially if the youth is an emancipated minor.

Since both the child/youth and family members will have a general understanding of the PICM assessment process based on the preliminary explanation, it is then possible to share the PICM-CAG grid with the child/youth and family after the assessment is complete to obtain their feedback and buy-in. This creates an atmosphere of collaboration, recognizing the important role that the child/youth and parents/guardians have in care planning for the child/youth.

Physician Understanding of the PICM Biological Domain

Unless children/youth come from populations with a focus on BH issues, the majority will have medical conditions for which assistance is needed, although there are exceptions since many children/youth with primary BH problems only seek care for

Table 7.5 PICM biological domain

- Chronicity (HB1—lifetime)
  - Risk—presence of chronic medical conditions
  - CM outcome objective—illness understanding and treatment engagement; consistent and coordinated care
- Diagnostic dilemma (HB2—lifetime)
  - Risk—inconsistent or inappropriate treatment
  - CM outcome objective—medical diagnosis clarification and targeted treatment
- Symptom severity/impairment (CB1—last 30 days)
  - Risk—uncontrolled illness or unnecessary impairment
  - CM outcome objective—stabilized illness and maximum function
- Diagnostic/therapeutic challenge (CB2—last 30 days)
  - Risk—complicated, invasive, costly, or painful tests or interventions; nonmedical contributions
  - CM outcome objective—least complicated, invasive, costly, and painful medical tests and interventions; nonmedical contribution reversal; stabilized health
- Complications and life threat (VB—next 3–6 months)
  - Risk—poor medical outcome for child/youth if CM withdrawn
  - CM outcome objective—stabilized physical illness; successful child/youth self-management

these problems in the medical setting. Table 7.5 summarizes the type of risks and PICM outcome objectives desired for each item within the biological domain. All items within this domain pertain only to medical conditions with the exception of diagnostic/therapeutic challenges (CB2). As with the adult grid, an anchored score of “3” indicates that something other than the physical illness is contributing to the poor “medical” health outcome.

High scores in the biological domain of the PICM-CAG, as in all other domains of the PICM, have attendant issues associated with them since it is not just the child/youth with the illness who reacts to the medical situation but also her/his parent/guardian. Thus, as the PICM manager documents scores, it is well to include notes or comments related to concerns about the child/youth or the parent/guardian, so that the direction of assistance on behalf of the child/youth for the care plan is better defined. For instance, the child/youth may be reluctant to engage in a treatment because it is embarrassing when administered during times of association with peers, such as pulmonary toilet for children/youth with cystic fibrosis who require treatments during the school day. In such situations, the parent may not see or understand the child/youth’s emotional reaction or may have communication challenges with the child/youth. In these cases, addressing issues related to both the child/youth and parent/guardian is critical in order for treatment adherence, and health, to improve.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the biological domain for children/youth (see Appendices I and J).

Physician Understanding of the PICM Psychological Domain

All historical items in the PICM psychological domain specifically refer the child/youth's historical situation rather than the parent/guardian. Children too young to exhibit the type of coping skills, cognitive impairments, or mental health symptoms listed would receive a score of "0" on these items. However, even in infants, it is possible to know if there were pre- or perinatal adverse events. Further, risk factors for and symptoms of problematic caregiver attachment could be identified. Thus, scoring would be based on understanding of the child/youth's situation.

Table 7.6 summarizes the type of risks and PICM outcome objectives desired for each historical item within the psychological domain. This includes the two items added to the adult ICM-CAG that document cognitive function and adverse early life events, such as trauma. While adverse life events can be either physical or psychological, they are included in the psychological domain because the consequences of the events most often present as emotional, behavioral, or cognitive problems.

Like historical items in the PICM, mental health symptoms (CP2) exclusively relate to symptoms or illnesses experienced by the child/youth, the degree of impact of which is covered by the anchor points (Table 7.7). Treatment adherence (CP1), on the other hand, covers the attitude and actions of both the child/youth and the parents/guardians. Like items that address dual components, such as diagnosis and treatment (CB2), treatment adherence would be scored based on the contributor to adherence that most impairs treatment follow-through. Sometimes this is a parent/guardian who doesn't want her/his child/youth to take a medication that she/he finds objectionable. Other times this is an oppositional child/youth bent on doing the reverse of what she/he is told. Regardless whether it is the child/youth, the parent/guardian, or both, assistance and support would be directed at correcting poor adherence or the outcomes it creates.

Table 7.6 PICM psychological domain (historical)

- Coping with stress (HP1—lifetime)
  - Risk—nonproductive problem-solving capabilities or handling of stress
  - CM outcome objective—stress reduction; improved problem-solving strategies
- Mental health history (HP2—lifetime)
  - Risk—history of mental health symptoms associated with impaired function
  - CM outcome objective—mental health support and necessary follow-up
- Cognitive development (HP3—lifetime)
  - Risk—cognitive impairment interfering with ability to adapt/succeed
  - CM outcome objective—understanding of cognitive level with implementation of needed supports
- Adverse developmental events (HP4—lifetime)
  - Risk—perinatal or child/youth physical, sexual, or psychological traumas or injuries
  - CM outcome objective—mental health support and necessary follow-up

Table 7.7 PICM psychological domain (current and health system)

- Treatment adherence (CP1—last 30 days)
  - Risk—poor assessment and treatment adherence by either child/youth or parent/guardian
  - CM outcome objective—documented adherence with improved health
- Mental health symptoms (CP2—last 30 days)
  - Risk—presence of mental health symptoms/conditions in the child/youth
  - CM outcome objective—mental condition stabilization; appropriate level of care
- Mental health threat (VP—next 3–6 months)
  - Risk—poor coping, adherence, mental health outcomes if CM withdrawn
  - CM outcome objective—independent ability to handle stress and solve problems, adhere to treatment, and have stabilized mental health symptoms

As in the biological, social, and health system domains, psychological vulnerability (VP) is the indicator that the PICM manager uses to assess if the child/youth and her/his family are ready to be considered for return to standard care. A prime objective for all children/youth entering PICM is sufficient health stabilization so that they can graduate from case management, yet retain the gains they have achieved during PICM (self-maintenance). It should be noted that not all children/youth will be candidates for graduation due to ongoing vulnerability, i.e., VB, VP, VS, or VHS scores above "1." Two potential ways to handle this situation are as follows: (1) less frequent contact with the child/youth and family with close monitoring for change in their presentation or (2) acceptance that maximum benefit has occurred through PICM with discharge despite continued high vulnerability.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the psychological domain for children/youth (see Appendices I and J).

Physician Understanding of the PICM Social Domain

It is in the social domain on the PICM-CAG that the most additions to the adult grid are made. This is where issues related to both the child/youth and the parent/guardian are of considerable importance. Table 7.8 summarizes historical items within the PICM-CAG. Only for school functioning (HS1), which assesses the child/youth's success in school, does the item specifically relate to only the child/youth as opposed to the youth/caregiver dyad. Family and social relations (HS2) address both the child/youth's socialization skills and the presence of family dysfunction, such as divorce or separation, parental neglect, etc. Caregiver/parent health and function (HS3), on the other hand, focuses on the health and function of the child/youth's family unit and the degree to which factors related to it may interfere with fulfilling child/youth needs and parenting capabilities.

Table 7.8 PICM social domain (historical and vulnerability)

- School functioning (HS1—lifetime)
  - Risk—impaired achievement, attendance, or behavior at school
  - CM outcome objective—school achievement consistent with ability; acceptable school behavior and attendance
- Family and social relationships (HS2—lifetime)
  - Risk—dysfunctional family; poor peer relationships
  - CM outcome objective—stabilized home; can form productive peer relationships
- Caregiver/parent health and function (HS3—lifetime)
  - Risk—unhealthy, disabled, or poorly coping parents/guardians
  - CM outcome objective—adequate support/treatment for parental health problems; parenting capabilities
- Family/school/social system vulnerability (VS—next 3–6 months)
  - Risk—poor child/youth support or nonproductive/unsafe family, home, and school environment if CM withdrawn
  - CM outcome objective—stable and safe living situation with effective parental support and productive school participation if CM withdrawn; self-management

Table 7.9 PICM social domain (current)

- Residential stability (CS1—last 30 days)
  - Risk—unsupervised, unstable, or unsafe living situation; poor nutrition
  - CM outcome objective—safe and stable nurturing living environment
- Child/youth support (CS2—last 30 days)
  - Risk—lack of child/youth support during times of need
  - CM outcome objective—accessible support system for child/youth
- Caregiver/family support (CS3—last 30 days)
  - Risk—lack of parent/guardian support during times of need
  - CM outcome objective—accessible support system for parent/guardian
- School and community participation (CS4—last 30 days)
  - Risk—school absences; absent/nonproductive extracurriculars
  - CM outcome objective—full school attendance; child/youth growth through extracurricular involvement

Three of the items in the current PICM social domain address the stability, safety, and nurturing aspects of child/youth's home environment (CS1), the support system available to the child/youth in time of need (CS2), and the degree to which the child/youth attends school and participates in extracurricular activities (CS4). All of these reflect on parent/guardian capabilities but are directed to measure what the child/youth actually experiences (Table 7.9). The fourth current item assesses the degree to which support is available to the parents/guardians related to meeting the needs of the child/youth (CS3).

Social vulnerability (VS) relates to the risk of adverse outcomes if individualized assistance associated with PICM is withdrawn from either/both the child/youth and the parent/guardians (Table 7.8). If risk factors for either the child/youth or family remain in the "2" or "3" range, gains could be lost if PICM is discontinued.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the social domain for children/youth (see Appendices I and J).

Physician Understanding of the PICM Health System Domain

Access to care (HHS1) reflects the care that is fiscally, culturally, and geographically available to the child/youth (Table 7.10). Since a child/youth's health insurance may be different than that of her/his parents/guardians (HHS1), it is necessary to clarify the specific carrier and benefits available to the child/youth through her/his plan. Further, having coverage is no guarantee that providers are available who accept the child/youth's insurance type. This is where a level of understanding by the PICM manager about care availability based on benefits and/or information about this from her/his supervisor or Medical Director can be of importance. Without coverage accepted by geographically available providers, the child/youth may not receive indicated treatment. The same would be true for children/youth living in rural settings where specialty services, such as child psychiatry, or language-sensitive, such as Somali-speaking individuals, providers may not be available.

Treatment experience (HHS2) addresses both the child/youth's and the parent/guardian's experience with physicians and medical care. Regardless of whether it is the parent or the child/youth, physician mistrust, perceived physician disinterest, or

Table 7.10 PICM health system domain

- Access to care (HHS1—last 6 months)
  - Risk—poor system-based child/youth access to appropriate care
  - CM outcome objective—insurance coverage; access to needed providers
- Treatment experience (HHS2—lifetime)
  - Risk—child/youth/parent mistrust of doctors; adverse experience with care, e.g., drug reaction
  - CM outcome objective—resolved mistrust; identified acceptable providers
- Getting needed services (CHS1—last 30 days)
  - Risk—logistical inability to get needed services
  - CM outcome objective—money, transportation, referrals, etc., for health needs
- Coordination of care (CHS2—last 30 days)
  - Risk—noncommunication and collaboration of providers; iatrogenic worsening
  - CM outcome objective—provider communication; care coordination and transition
- Health system impediments (VHS—next 3–6 months)
  - Risk—poor access to and/or coordination of care if CM withdrawn
  - CM outcome objective—persistent access to and receipt of needed and coordinated services from acceptable providers

bad experiences in the health system are predictors of nonadherence and poor patient-provider communication.

Getting needed services (CHS1) and coordination of care (CHS2) both specifically address issues related to the child/youth and may present special areas of concern, especially if the child/youth has a complicated health situation, such as concurrent medical and BH difficulties. CHS1 pertains not only to the family's ability to get the child/youth to appointments and meet out of pocket expenses, but it also documents whether the child/youth is receiving outcome-changing specialty care, such as for BH conditions. When selected conditions are not improving and/or referrals for specialty care are not forthcoming, then the child/youth would not be "getting needed services."

A similar challenge arises for youth when they are nearing the need to move to "adult" services and care. Transition from pediatrics to adult physicians can be a daunting task for transitional age youth with complicated health conditions. Many adult providers are reluctant to accept new patients with health complexity, as they may have poorly paying or nonexistent insurance plans due to their complicated health history. This, of course, is changing with insurance packages that do not penalize for preexisting conditions, but in practicality, many of those insurance plans remain unaffordable since the benefit structure may transfer medical expenses from the plan to the young adult through copayments and deductibles.

Finally, CHS2 confirms that the providers for the child/youth are in communication with each other and are attempting to coordinate the services provided. Most challenges associated with this risk factor occur when children/youth have both medical and BH conditions since care delivery settings and medical records are often separate. It also becomes a challenge when a youth is transferring to adult care.

Physician Participation in PICM

PICM has standardized definitions and well-defined characteristics, processes, and operating principles. Confusion arises in how this program specifically compares to programs or services that include care coordinators, care managers, and complex case management. Each of these terms refers to activities that may be incorporated into the pediatric PCMH [20, 21]. Case management can potentially bring great benefit to the child/youth and family, but currently carries a level of confusion or ambiguity about who is in charge of and carries out the support activities [4, 6]. Program descriptions are also quite varied on what kinds of assessment and assist activities the terms include.

The following represents case examples of the types of physician involvement that might be expected based on the levels of case management activity. They may all be seen as part of usual care in a PCMH. These cases and their discussion emphasize how physicians may be involved. The case examples are intended to provide thoughtful reflection on establishing "best practice" within the readers' organizations.

Low-Intensity Case Management: Callie

Callie is a 13-year-old girl with severe asthma that is well controlled. She is on an asthma action plan that is updated every 6 months. She uses an inhaled corticosteroid, oral montelukast (Singulair), and has ready access to a rescue inhaler and oral antihistamine. She has received immunotherapy—allergy shots—supervised by her allergist. Recently omalizumab (Xolair) was added after prior authorization. Callie was adherent to her treatment regime and had no barriers to treatment. Well-controlled asthma allowed Callie to compete in her favorite sport—soccer.

One case manager, Joan, and one utilization manager, Sara, supported Callie's care. Joan was clinic based. She assisted 67 patients with severe asthma in her primary care pediatric office. Her duties included:

- *Tracking needed follow-up visits and the timeliness of asthma action plan reviews through the clinic's electronic patient registry*
- *Ensuring that specialists' reports and communications were tied to the patient's records*
- *Alerting clinicians if important changes occurred*
- *Coordinating specialty referrals*
- *Assisting with prior authorizations, such as for omalizumab*

Sara was commercial insurance company-based. She resolved benefit management questions, such as prior authorization procedures for omalizumab. Her job was to review clinical information and previous medication attempts and contact the patient or clinic, if needed, to ensure that optimal asthma management steps were in place before omalizumab approval. Interestingly, the insurance company called Sara a "case" manager.

Both Joan and Sara focused on targeted tasks. Joan attempted to assure health stability for an at-risk youth. Sara adjudicated approval of off-formulary medications. Callie had no issues related to adherence or resistance to treatment. Specialty care was coordinated. Even approval for Xolair turned out to be uneventful.

Physician interactions with Joan and Sara differ depending on the physician's position. The primary care physician is in direct communication with Joan. Depending on the stability of Callie's asthma, contact may vary from daily to rarely. The intent is for any problems to be identified early and dealt with effectively before complications arise. This would be considered a clinical enhancement since quality of care improves and adverse outcomes can be prevented compared with "usual care." Since Callie's asthma has been controlled and stable historically with little in the way of case management assistance, however, the risk for negative outcomes is low; thus, there is likely to be little in the way of cost savings.

Given Callie's presentation and history, Callie's allergist has had no interaction with Joan and does not even know that Joan is a part of the treatment team. Rather, Joan merely assures that the allergist's recommendations reach Callie's pediatrician and that adherence occurs in the absence of contraindication. Only if recommendations are unclear, adherence issues are present, or family concerns arise would the allergist hear from Joan, but most often only if delegated by her pediatrician.

A physician working as health plan Medical Director uses her/his background and expertise to review Callie's indications for approval of omalizumab. Criteria in today's world are generally well defined. This makes it possible for most determinations to be carried out by Sara from the paperwork submitted by Callie's pediatrician or occasionally telephonic clarification of information from clinic staff. Only if there is question of whether clinical criteria are met would the Medical Director become involved. If Medical Director involvement is needed, she/he usually applies her/his judgment, but occasionally there is a need to call the primary care clinician for additional information that would support or negate the medication request.

Physicians in each of the three described roles contribute in different ways to Callie's health outcome. The primary care physician directly supervises and works with Joan and only indirectly interacts with Sara by completing medication authorization paperwork. Occasionally, the primary care physician will be contacted by the health plan Medical Director when medication authorization requires additional information. The allergist will be unlikely to know of the existence of either Joan or Sara as a part of her/his evaluation of Callie. The health plan Medical Director will be in direct contact with Sara and virtually never with Joan since Joan is employed by the clinic. Joan would access her clinic's Medical Director for guidance for patients with complicated issues or treatment nonresponse as described in the next cases.

Moderate- to High-Intensity Case Management: Yolanda

Yolanda is a 13-year-old girl with moderate to severe asthma and goes to the same primary care clinic as Callie. Joan is also involved with Yolanda. Yolanda's situation is not nearly as favorable—or straightforward—as Callie's, which puts additional strain on Joan's time, efforts, and even patience. In addition to asthma, Yolanda also has oppositional defiance disorder, attention-deficit/hyperactivity disorder, and school performance issues. Yolanda's mother is a single parent with her own stresses. Tobacco cessation is something that her mother has tried numerous times with no success. Further, she reports that it is unsafe to leave her apartment to smoke. Secondhand smoke in Yolanda's apartment, unfortunately, is a strong asthma trigger.

Yolanda's mother has health insurance through her employer, but it has "bare bone" benefits with a narrow specialty network and strict referral requirements. The medication formulary options available to manage Yolanda's conditions just don't seem to work well. "Branded" products are too expensive but would likely be more effective and better tolerated by Yolanda. As it is, the current products cause unpleasant side effects and do not effectively manage her asthma and other conditions. Yolanda frequently uses the emergency department for asthma, out of control behavior, or a combination of the two.

As in many clinic settings, Joan is expected to perform her care coordination role in addition to her regular nursing activities including providing direct patient care, *such as immunizations and urgent telephone access for families. As a result, she has little time to effectively assist and support Yolanda in achieving better outcomes. Even if she had time, she knows of few BH resources to help Yolanda. Joan had always been a "medical" nurse and had little experience with BH issues. She did the best she could, but BH support for Yolanda was at best haphazard. Yolanda's pediatrician does the best he can at medication management, but he is fighting an uphill battle given Yolanda's living in a smoke-saturated environment and his limited knowledge about BH treatment. At the end of the day, Yolanda was unable to connect with specialty services, either on the medical side or the BH side.*

Yolanda, like Callie, has commercial insurance, but she is hampered in obtaining needed services because of the narrow provider network the plan supports and by physician shortages due to a recent expansion of covered patients in her state. Though BH care is part of Yolanda's coverage, BH specialists have 6-month waiting lists and are located across town from where Yolanda lives. Since Yolanda is using high levels of health services, she is also a candidate for health plan-based case management, but Yolanda's mother does not know what case management is nor that she can ask for help as a part of that program. Regardless, she is suspicious of the health system and usually avoids involvement even when it may be available.

In this scenario, Yolanda's pediatrician is aware of Yolanda's issues and encourages Joan to help as much as she can, but the operational clinic environment is not set up to effect change in Yolanda's health outcomes. Joan, while being tasked with assisting and supporting Yolanda, as case manager, does not have the time, the resources, or the knowledge to impact change. At the health plan level, the Medical Director and her/his case managers are unaware that Yolanda exists. Neither is involved in supporting her care, even though she has already been identified as a target for health plan-based case management. Health plan case management lists far exceed the ability of managers to initiate contact, so Yolanda and her mother never received a call. Thus, how could Yolanda's situation be improved?

This scenario is one in which a physician working with either a clinic or health plan case manager could intervene with improved outcomes, presuming that at least one of the case managers had dedicated time, assessment findings, and tools. On the clinic side, Joan would ideally be in a position to bring cases like Yolanda's to the physician's attention and then work through barriers to improvement. Health plan-based case management could also have worked for Yolanda.

With this case management environment, the care plan would include targeting asthma prevention and treatment from specialists within Yolanda's network of providers, obtaining approval for medications outside the health plan formulary as recommended by Yolanda's physicians, actively searching for and identifying willing behavioral health providers for Yolanda and her family, helping Yolanda's mother reduce her tobacco use within the house, and systematically following up on outcomes. Joan would also expand her assessment to uncover other clinical and non-clinical factors that may be contributing to Yolanda's persistent symptoms and high emergency room use. Finally, there may be community or school-based resources to benefit Yolanda's course.

In attempting to maximize Yolanda's health, it is possible that Yolanda's pediatrician could connect with the health plan Medical Director in seeking formulary exceptions or substitutions. During this process, a request could be made for alternative case management services through the health plan that are not possible for fiscal reasons in the pediatrician's clinic. Similar expectations for the health plan case manager would be anticipated as those described for Joan above. In fact, a health plan case manager may be able to identify geographically accessible BH providers who could be accessed quicker than might occur when going through usual clinical channels since she/he would have convenient lists of network providers.

Complex Integrated Case Management: Renaldo

Renaldo is a 9-year-old boy who has a long list of medical diagnoses. His medical diagnoses, however, pale in comparison to other considerations, all of which place him at risk for suboptimal health outcomes. He had a near-drowning event as a toddler when he wandered into an unsupervised swimming pool, sustaining a significant hypoxic injury before he could be pulled out and resuscitated. He has moderate cerebral palsy, mostly affecting his lower extremities, but it also interferes with fine motor control of his hands. Hypoxic injury also impacted his visual acuity, but vision evaluations have been sorely lacking. He has residual cognitive impairment and chronic lung disease resulting from that near-drowning incident. Lung problems are complicated by wheezing due to sensitivities to pollens, dust mites, and roaches. He also suffers from chronic sinusitis that exacerbates his migraine-type headaches.

As if medical problems were not enough, he also carries diagnoses of autism spectrum disorder and attention-deficit/hyperactivity disorder. Renaldo exhibits impulsivity, frequent outbursts of anger, and oppositionality that are challenging to de-escalate. Multiple medications have been tried for Renaldo's medical and behavioral problems. The only ones that seemed to produce benefit are now "off formulary" for Renaldo.

Renaldo's father sustained a workplace injury and is permanently disabled with additional medical costs of his own. Even though his mother works full time, his family's financial situation is strained. They are typically behind in their rent payments. Support for the family by other family members and friends is limited. Now that Renaldo is entering preadolescence and is becoming taller and heavier, no one wants to take care of him due to his behavioral challenges. He has three younger siblings—preterm triplets now 5 years old—who did not escape the medical complications of prematurity and the multiple gestation pregnancy.

In school Renaldo is in a mainstream classroom with typically developing children, but he needs more intensive one-to-one supervision as well as therapeutic services to address his specific disabilities that are lacking due to the school district's budget constraints. Renaldo's mother is too overwhelmed by all the stresses in her life to be an effective advocate within the school system to obtain additional services. Participation in after-hour school activities and community events is not *an option for Renaldo, though he would likely benefit by some sort of structured—and highly supervised—play time with other children.*

Health insurance presents the final hurdle for Renaldo. He is eligible for Medicaid, but this is not an easy system for the family to navigate or find ready access to primary care services. Specialty care, physical therapy, and occupational therapy have not been available due to restricted clinicians and services and a lack of someone to help the family access appropriate services and referrals.

Joan and a health plan case manager using traditional disease-oriented case management approaches would experience major challenges in assisting with the multidomain health risks found in Renaldo's situation. Either would need time, a complex case management assistance process with potential to bring value, and training in its use to effect change. This requires a new way of looking at the assistance and support process, the PICM way.

PICM: A Solution for Patients Such as Renaldo

With "usual care," Renaldo and his family fall between the health system cracks. Renaldo receives only episodic, urgent, and emergent care. To highlight the interventions and improvements in outcomes that are possible with integrated case management, opportunities for improved outcomes in patients like Renaldo are described below. To be successful, however, changes in how Renaldo is assessed and assisted are necessary.

The first requirement is that the delivery system or health plan adopts the pediatric integrated case management model. The sponsoring organization's leadership must consciously decide to commit the resources needed to supply full multidomain and cross-disciplinary assist and support services. Once completed, case management work processes would have the characteristics described below, and physicians would contribute to their development and implementation in several ways. Renaldo's example is idealized for the purposes of illustration, but the key points are applicable to similar children/youth presenting with need for complex integrated case management capabilities.

Complex Case Triage

Population triage is an important antecedent to the initiation of PICM. Renaldo has to "trigger" for entry into the queue. Depending on the organization, this can be driven by prioritizing algorithms informed by the total cost of care, qualifying diagnoses, hospital/emergency room admissions, number of physicians involved in the care, number of medications used, or a combination of the above. Direct referral for case management services could also be an entry option, but it would need to be limited to defined parameters understood by referring physicians. Physicians will usually have direct input about the criteria used to identify patients for PICM consideration. This process is known as “stratification.”

The final step in the triage process is determining if the child/youth and family are willing and able to engage in the assistance and support process. If the family and/or child/youth cannot be contacted, if they exhibit active resistance to the PICM assessment process, or if they have costly and/or complicated health situations that would not be appreciably improved by PICM procedures, then they are not candidates for participation. Engagement by children/youth and families that can benefit from engagement is critical for maximizing value of the PICM program for patients and the system. This component of triage is called “prioritization.”

Whether physicians are among those involved in developing triage criteria or those supporting PICM engagement from their practices, it is important for them to assure that the stratification and prioritization process will reasonably target those best suited for PICM in order to maximize the return on the PICM investment. It is also important that PICM managers are assigned the few most complex patients from the practice or health plan to allow them to focus on the outcome changing activities needed to reverse health and cost barriers for this resource-intensive population.

Physician Involvement After PICM Assessment

Once a child/youth and the family have agreed to participate in PICM, completion of the pediatric scripted dialogue that allows anchoring of the PICM-CAG is initiated. Regardless of the setting in which the assessment is completed or the sponsoring organization (clinic, hospital, ACO, health plan, case management vendor, government program), a full assessment of the biological, psychological, social/family situation, and health system factors needs to be conducted. Highlights for Renaldo’s PICM-CAG (Table 7.11) in layperson’s terms are summarized above and below the grid:

Biological Domain

- Cerebral palsy—untreated; interferes with mobility and fine hand motor control; will deteriorate without physical and occupational therapy
- Vision—inadequately assessed visual impairment; impacting development and school success
- Asthma—uncontrolled; immediate threat to life
- Allergies—unassessed; contribute to asthma control, likely chronic sinusitis and headaches
- Ineffectively treated medical conditions—exacerbation of behavioral symptoms and impaired participation in school

Psychological Domain

- Autism spectrum disorder—untreated; interferes with medical treatment, reaching developmental milestones, and academic achievement

Table 7.11 Renaldo’s PICM-CAG at baseline

Baseline	**HEALTH RISKS AND HEALTH NEEDS**					
Renaldo	**HISTORICAL**		**CURRENT STATE**		**VULNERABILITY**	
Total Score = 64	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity **HB1**	*3*	Symptom Severity/Impairment **CB1**	*3*	Complications and Life Threat **VB**	*3*
	Diagnostic Dilemma **HB2**	*3*	Diagnostic/Therapeutic Challenge **CB2**	*3*		
Psychological Domain	Coping with Stress **HP1**	*3*	Treatment Adherence **CP1**	*2*	Learning and/or Mental Health Threat **VP**	*3*
	Mental Health History **HP2**	*3*	Mental Health Symptoms **CP2**	*3*		
	Cognitive Development **HP3**	*3*				
	Adverse Developmental Events **HP4**	*3*				
Social Domain	School Functioning **HS1**	*3*	Residential Stability **CS1**	*2*	Family/School/Social System Vulnerability **VS**	*3*
	Family & Social Relationships **HS2**	*3*	Child/Youth Support **CS2**	*2*		
	Caregiver/Parent Health and Function **HS3**	*3*	Caregiver/Family Support **CS3**	*2*		
			School & Community Participation **CS4**	*2*		
Health System Domain	Access to Care **HHS1**	*2*	Getting Needed Services **CHS1**	*3*	Health System Impediments **VHS**	*2*
	Treatment Experience **HHS2**	*1*	Coordination of Care **CHS2**	*1*		

- Cognitive impairment—unassisted; completed assessment is needed to understand assistance approach and future expectations
- Anger and oppositional behavior—untreated; interferes with school and peer socialization (may be exacerbated by sinus pain and headaches)
- ADHD—untreated; interferes with school and peer socialization

Social Domain

- Financial and housing insecurity—stable but inadequate family resources; behind on rent payment
- Parent support—limited social support for Renaldo’s parents
- School services—qualifies for support services but only has a “babysitter” in class; no IEP (individualized education program)
- Interaction with peers—essentially none

Health System Domain

- Primary care clinician—none
- Designated specialists—no involvement
- Coordination of care and communication between providers—few providers involved to communicate
- Access to services—long waitlists for network provider if any are available at all
- Experience of care—limited to episodic urgent and emergent care

Location Specific Physician Participation in PICM Management

Health Plan, Case Management Vendor, or Government Program Medical Directors

After completion of the PICM-CAG, there are multiple points at which physicians may become involved on behalf of Renaldo in the PICM process. The nature of the contribution of physicians depends on their location of employment in relation to the PICM program. If a health plan, case management vendor, or government program is the sponsor of the PICM program, their non-clinic-based (offsite) PICM managers will assess and assist the child/youth and their family. When this is the case, organizational Medical Directors should actively collaborate with the PICM managers to assure that:

- Care plans contain appropriately developed goals and actions for active cases.
- Care plan goals are being accomplished on behalf of the children/youth and their families.
- Assistance and care delivery escalate when expected improvement is not occurring.
- Participating children/youth and families are deriving benefit (PCIP).
- Members of the active caseload are moving toward graduation.

In addition to working with the PICM managers to initiate the assistance process, organizational Medical Directors would also be tasked with communicating with the child/youth's clinicians as a clinical support expert in an attempt to ensure adequate progress. Not only do Medical Directors provide a sounding board for the clinicians about additional possibilities for the child/youth when progression is not occurring, they also may have information that the clinicians do not possess, such as network providers who might contribute to care, formulary medications that might be considered, or non-clinical assistance procedures that were picked up on the PICM-CAG but not available through the standard medical or behavioral assessment.

For clarification, Medical Directors who are part of case management programs, such as PICM, do not contact treating physicians to adjudicate benefits or establish medical necessity. Unfortunately, this is the most common interaction that primary care physicians have with Medical Directors at health plans, often with negative consequences. In PICM and similar case management programs, Medical Directors should be serving as professional resources to brainstorm about complicated patients who have often failed first- and second-line treatment. When Medical Directors participate in this way, they can often be of great value to primary care physicians and children/youth. They often possess information, such as the prioritized PICM-CAG and options that are not readily apparent to the primary care physician, such as flexing coverage benefits to include certain non-network providers or non-formulary medications.

Offsite case management programs differ in how they execute the case management process. One option is to have very direct and frequent interaction between a

Medical Director and a case manager. In that situation, a case manager would bring primarily cases with health complexity to the Medical Director. Together they would work through the different challenges and options, cocreating a care plan and documenting progress. Less desirable from the perspective of PICM, other offsite case management Medical Directors do not take active roles in the work processes of case managers, but rather serve as resources when managers feel a need for help. With less active collaboration, pertinent issues related to health improvement may be missed, potentially compromising outcomes and making the case management process less efficient.

Physicians Employed by Clinics, Health Systems, or ACOs

Physicians may be the front-line clinicians caring for complex patients and collaborating with PICM managers, regardless of who sponsors the PICM program (i.e., offsite or onsite in regard to patient care). The primary care physician who accepts Renaldo among her/his patient panel would first review Renaldo's PICM-CAG and the care plan (CP) created by the PICM manager and perform similar tasks to those listed above for Medical Directors. However, in the case of the primary care physician, she/he makes decisions related to health evaluations and the treatment of illness and remains "in control" of the overall management of Renaldo. The primary care physician's support of the family's engagement in PICM is crucial, as is ongoing review of the care plan and responsiveness to pertinent action items.

In very complex patients such as Renaldo, collaboration among physicians, the child/youth, family, and PICM manager is necessary to help prioritize case management actions. Critical items should be addressed first, such as control of potentially lethal asthma attacks, but important additional, less dangerous, items should eventually reach the level of action. Care is required, in cases such as Renaldo, that too much is not tried at once. Child/youth and family collaboration is also important particularly in these initial steps. It is also important to incorporate Renaldo's mother's clinical and functional goals into the PCIP to ensure engagement and participation in the care plan by Renaldo's family.

Actions related to less urgent priorities, such as partnering with the school system to develop and implement an effective IEP, initiating BH assessment and treatment, or connecting Renaldo and his family with community resources, can be initiated while initially addressing more pressing health-stabilizing activities. That is the beauty of the PICM-CAG: it highlights where goals and actions are needed while also supporting prioritization through scores and color codes. The PICM-CAG serves as an ongoing reference and guide as managers and families work together to address barriers to health.

As children/youth and families engaged in PICM near the point of graduation, preventive activities, increasingly assumed by Renaldo and his family, are reviewed and implemented. For instance, there may be community groups or school or faith-based organizations with programs that could provide normalizing opportunities to introduce Renaldo to peer-related play and interactions. Knowledge and consideration of these resources that are traditionally outside the healthcare system are important contributions provided by the PICM manager in coordination with Renaldo's primary care physician.

Renaldo will need a variety of consultations with specialists once the initiation of the care plan reaches the stage of full deployment. It is important for those who become involved with Renaldo to know that a PICM manager is involved in the case, to share the PICM-CAG assessment and its explanation, and to help them understand the value that a PICM manager can bring to Renaldo's clinical situation and perhaps life circumstances. By taking these steps, Renaldo's specialists, whether from medical subspecialties or behavioral health programs, become a part of the clinical team contributing to total health outcomes. This is important, especially since behavioral health specialists typically are disconnected from medical services. Communications may be limited by resource availability and/or privacy concerns. Inherent in the PICM work processes is cross-disciplinary support, including enhancing coordination and communication among all specialists, community resources, and the primary care physician.

Renaldo's BH issues are well beyond those that are generally addressed by primary care physicians. Likewise, even the BH specialists involved in his care will require a level of sophistication and robust understanding of child development, mental illness, and family dynamics. For this reason, the PICM managers will assist Renaldo, his family, and the primary care physician in accessing needed levels of psychiatric services. Not infrequently, this will need to be done via telepsychiatry due to the limited supply of child mental health specialists, and telehealth is covered in greater detail in Chapter 8. Also included in the PICM manager's charge would be documentation of BH outcomes along with medical outcomes for Renaldo.

For Renaldo, enrollment in a PCMH is an important initial step, either through a pediatric or family medicine primary care clinic. PCMHs can be effective in their management of patients like Renaldo, especially when they possess care coordination capabilities [4, 6]. If Renaldo's medical home has a mature case management program, preferably that incorporates PICM practices, it has significant potential for enhancing value for children/youth with health complexity.

Regardless of the sponsoring organization for PICM managers, the clinicians for participating children/youth and families will necessarily be involved whether they choose to collaborate or not. Sometimes the contact is minimal, in part, because of the lack of appreciation by the sponsoring organization for the value that clinicians bring to the PICM process and in part due to reluctance of clinicians to collaborate with programs about which they have little understanding or are not in control. It is helpful for families and the health system when clinicians treating participating children/youth and families actively collaborate in PICM management activities, even when the program does not emanate from the clinical setting in which they work. As long as the principles and practices of the manager are consistent with PICM, it does not matter who "owns" the program. What matters is how effectively it achieves improved health and cost outcomes for participating children/youth.

Physician Support for Measurement of Health and Cost Outcomes

To document the value of PICM for the sponsoring organization, the PICM process itself includes a record of outcomes associated with care plan successes (MP3) as well as clinical, functional, satisfaction, quality of life, and financial measures (ROM). The PICM manager updates these two documents repeatedly throughout the course of PICM assistance. After graduation, the final report on the follow-up PICM-CAG, outcome changes documented on the MP3, and the changes (improvement or worsening) noted on the ROM provide evidence for whether and how value has been given to Renaldo.

Renaldo's level of complexity is substantial. As a result, early in the course, his PICM manager and clinicians will recognize that change expectations are likely to be measured in terms of months, if not years. Renaldo and his family will likely need PICM assistance for some time before they can manage his care independently. Renaldo also has the anticipated problem of transitioning from pediatric to adult care within the coming years. Furthermore, each developmental phase will bring other health-, social-, and system-related challenges that need to be approached in a thoughtful and organized manner. Physicians have the dedicated education and experience to identify and anticipate these challenges and offer the expertise for identifying actions that may overcome barriers to achieve health.

Summary

Pediatric physicians have a very direct and important role in supporting integrated case management activities. The first task is to define very explicitly what level of case management is being considered by their healthcare organization. Care coordination carried out by a non-clinical (non-RN) support staff may be effective for patients with low to moderate case complexity in terms of health outcomes, patient costs, and patient and family satisfaction. However, the most complex patients, often with a combination of physical health, behavioral health, social situation, and health system challenges, benefit most from case managers trained to practice PICM. These patients and their families require support from case managers who are facile in addressing their clinical and health system challenges in an integrated way, without hand-offs or other interruptions in care. Physicians working with case managers in this process also need to be familiar with the PICM approach to best support the PICM managers and their patients.

Physicians can be active in the integrated case management process at the primary care level, the behavioral health or specialist level, and even the insurance plan level. Roles and levels of involvement will vary, but the general idea is for each to work directly or indirectly with PICM managers, to understand how to interpret the PICM-CAG, to assist PICM managers in maximizing the care plan, and to collaborate in monitoring progress toward established goals. Ultimately, successful graduation for patients and families is the desired outcome, although the time required to reach the level of health stability for graduation may vary.

Systematically tracking outcomes in five important areas, i.e., clinical, functional, satisfaction, quality of life, and fiscal, are built into PICM. Used properly and consistently, they will demonstrate the value of PICM to families, clinics, healthcare systems, and health plans that sponsor the PICM program.

Finally, PICM fits very well into the development and implementation of the pediatric PCMH. The pediatric PCMH was originally developed for CSHCN, and by definition these children exhibit health complexity as defined by PICM. It is well accepted that these children/youth and their families are not served well through the "usual care" model. Case management is an integral part of successful healthcare for this population, and PICM offers the added benefit of integrating general medical, behavioral, social, and health system factors that influence outcomes for CSHCN. Given the current focus on accountability for health outcomes, programs such as PICM that document success are important. PICM can be implemented at multiple levels of the health system, and as with the PCMH, it maintains the patient and family's experience at the heart of the organizing principles.

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Part II

Guidelines for Physicians Working to Maximize Patient Outcomes in Collaboration with Integrated Case Managers

Chapter 8
Organizing and Implementing Value-Added Integrated Case Management

> *There is nothing so useless as doing efficiently that which should not be done at all.*
>
> —Peter Drucker

Chapter Objectives

- *To augment physicians' understanding of when ICM should be considered as the primary model for a case management program and how to combine it with less comprehensive management models.*
- *To describe getting started with ICM methodology, maximizing its strengths while recognizing its limitations.*
- *To discuss how physicians provide collaborative support to an ICM program organized under case management leadership.*
- *To describe organizational ICM deployment—defining the population served, educating stakeholders, resolving management model conflicts, contracting for ICM services, determining the location of ICM coordination, hiring and training personnel, and establishing work processes.*
- *To delineate the role and importance of outcome measurement.*
- *To review procedures for documenting ICM program value.*

Physicians should now have a grasp of the types of assist and support services, a conceptual framework for the value that ICM can bring to populations of patients with health complexity, how ICM can complement clinical practice, the effects of the interactions between medical and BH conditions on clinical and financial outcomes, and the foundational components of ICM and PICM used in patients. It is now time to discuss when and how an ICM program should be considered in an organizational setting and the high-level decision-making associated with its deployment. For purposes of this chapter, "ICM" will be used to refer to both the adult and pediatric components.

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Table 8.1 Core administrative value-enhancing ICM implementation components

- Use of senior or mid-career licensed health professionals, preferably with case management certification, for primary ICM application
- Uniform training in ICM with application of all core ICM principles and/or practices
- ICM service contracts that measure success in terms of measured patient health improvement and cost reduction
- An ICM practice environment conducive to longitudinal, multi-venue, cross-disciplinary ICM
- Supervisory support from physicians trained in the use of and support for outcome-oriented ICM

Of course, there is a need to customize ICM programs to the setting in which they provide service, as well as to the population served. There are, however, certain core ingredients that all ICM programs should have in order to achieve their health and cost objectives (Table 8.1). This chapter will discuss when it makes sense to go to the effort and expense of setting up ICM methodology, commonly encountered challenges, and strategies for ICM deployment. Since performance measurement and improved outcomes for patients and health systems are core components of ICM, fidelity to the ICM program is essential. Program customization follows once fundamental elements are in place.

When to Consider ICM as the Primary “Assist and Support” Model

Many assist and support programs are built to meet specific care delivery, income augmenting, or regulatory needs (Table 8.2). For instance, a hospital system wishes to correct high 30-day readmission rates in order to improve compliance with the Center for Medicare and Medicaid Services (CMS) standards [1]. The hospital system, thus, will logically target creation of a “transitions of care” program with the short-term goal of reversing unacceptable readmission statistics. Alternatively, an employer may wish to encourage a vision of health for their employees by setting up a wellness program. Each of these programs can be implemented in such a way that they bring targeted value (revenue, improved health at acceptable cost, or regulatory compliance) for the population that they serve.

In organizations in which selected short-term goals are desired for a focused population, one of the many assist and support programs, such as health coaching, discharge management, and patient navigation, described in Chapter 1 can be considered. With these, however, it will remain necessary to include components that increase the likelihood of improved health and cost outcomes since only a few have demonstrated clinical and fiscal performance enhancement [2]. This is true regardless of whether it is a disease management program, a care transitions program, or one of the many other popular assist and support programs being marketed to healthcare purchasers reeling from annual escalating costs of healthcare.

Table 8.2 Organizational needs that can be addressed by non-ICM primary management models

- Discipline specific health support, e.g., medical *or* BH
- Short-term focal gains, e.g., inpatient discharge management
- Organizations/groups wishing to improve focal regulatory or quality parameters, e.g., traditional disease management to improve HEDIS/satisfaction measures, transitions of care programs
- Contracts with "per case touched" reimbursement, e.g., follow-up call on *all* discharged patients (process outcome)
- To capture improved payment for complicated subpopulations, e.g., billing under CMS section 2703 for patients with chronic illness, by hiring managers with basic qualifications and limited case management training
- Targeted reduction in cost, e.g., disability management, workers' compensation (health costs and productivity)
- Improved health awareness/behaviors, e.g., wellness program, health coaching, employee assistance programs

Table 8.3 Organizational conditions ripe for ICM as the primary management model

- At-risk organization for health and cost outcomes—Accountable Care Organizations, health plans, employers, government agencies, other
- Interest in high-risk, high-cost patient stabilization
- Values cross-disciplinary (total health and cost) goals, i.e., medical and BH
- Desire for:
  - Maximal population-based cost containment
  - Longitudinal total health stabilization in complex patients/members/employees/enrollees/other
  - Integrated medical and BH services support
  - Adult and pediatric capabilities
  - Measured health and cost program outcomes for patients and the system

While ICM methodology can be used to address targeted needs in focal areas of care delivery, such as listed in Table 8.2, unless the targeted needs are connected to a more comprehensive program designed to attenuate or reverse adverse outcomes in the small subset of high-cost patients with health complexity, it does not make sense to go to the effort and expense of training case managers in ICM techniques and to deploy ICM as a system-wide model. Rather, assist and support personnel should be trained in management algorithms for the specific interventions that have previously been shown to achieve an organization's desired aim.

ICM is best deployed in situations where there is a wish to maximize long-term health and economic results in the 2–10 % of patients with the greatest likelihood of poor health outcomes and persistent high health-related cost. It can be deployed in conjunction with other management methods or as the primary and only approach used by an organization. The desire for global health improvement at reduced cost, which is the aim of ICM, is more likely to be considered in organizations that are or project becoming accountable for total health and cost outcomes as we move to population risk-based contracting associated with the ACA (Table 8.3) [1].

ICM is built on the premise that there is a small subset of patients in every physician's practice that manifest persistently poor symptom control and high levels of health service use. For these patients high-touch, longitudinal, relationship-based ICM is designed to reverse clinical and non-clinical barriers to improvement, and thus lower total health-related cost, in a greater percentage, than can be accomplished through standard care.

ICM programs recognize that their target population is vulnerable and that standard care practices are often ineffective. For this reason, illness stabilization takes time, effort, and engagement on both the part of the patient and the ICM manager in collaboration with the patient's physicians. Since participants in the ICM process are drawn from 5 to 10 % of patients that use 50 to 70 % of health resources [3], individual patient success is required in less than 10 % of those who enter ICM for the program to be economically advantageous. To the extent that health stabilization comes to a greater percentage, then the economic value to the sponsoring organization and the purchasers of care, let alone the patients, is enhanced.

For this reason, relationship-based ICM manager intensity of service support for patients in ICM programs is emphasized rather than the volume of patient throughput (covered in greater detail later). In large part, this is quite different than most traditional case management programs since they define success based on volume, i.e., the number of patient contacts made or the number of calls completed. As a result, ICM managers have caseloads that are smaller, stay with patients longer, may have multiple patient-ICM manager interactions (at least initially), and annually close fewer cases (150–250) than traditional case managers. On the other hand, those patients who successfully complete the program have improved health and what should be a lasting reduction in, typically, very high health service use as a result [4, 5]. *Measured health outcomes on the PCIP, a basic feature of ICM, documents to what extent clinical, functional, satisfaction, quality of life, and financial, hereafter called multifaceted, improvement is occurring.* It is using these measures that ICM manager success is determined.

If ICM is chosen as the principal management model for the reasons listed in Table 8.3 or for other reasons, then it is possible to use components of the ICM approach for additional targeted case management needs, such as support for transitions in care, disease management, disability management, and even wellness coaching for those already in the more comprehensive ICM program. ICM, on the other hand, does not target all patients in a population for participation, and so the complexity-based theoretical framework of ICM may not meet regulatory or contractual requirements with an external organization, such as transition assistance for *every* discharged patient. For this reason, a balance of management models used to meet explicit needs may be necessary within the same organization. Duplication of services, however, should be avoided, and coordination of core management practices should be consistent within an organization if at all possible. In this way, preference can be given to ICM manager assumption of responsibility for those already enrolled or who are candidates for the ICM program when less comprehensive management actions are necessary as a part of other contractual agreements.

Getting Started with ICM Methodology

ICM-trained management professionals have the greatest opportunity to bring improved health and reduced health service use to patients and, thus, value to an at-risk sponsoring organization. ICM managers, however, are likely to be the most costly to train and support in the work that they do. Thus, the first decision that an organization must make is whether the top 5–10 % of patients with health complexity can be readily identified, contacted, and successfully enrolled into an ICM program. If they can, the next question is whether the sponsoring organization will achieve dividends in terms of recognition for quality health procedures, improved patient outcomes, and/or direct or indirect cost reduction.

Presuming that such a population can be identified and recruited, that the rewards of ICM to patients will meet the sponsoring organization needs, and that there is interest in addressing patients' barriers to improvement, then the organization has to determine the percentage of those with health complexity that it wishes to assist through ICM, to calculate the number of ICM managers that would be needed to assist them, and then to project the return on investment based on organizational or national data. For instance, in one organization deploying an early ICM model, savings could be projected from initial member outcomes to be from $2 million to $3.3 million in year one with an ROI between 2.8:1 and 4.6:1 for managing 10 % of 100,000 members falling into the top 2–5 % of health service users with ICM procedures. This presumes that each ICM manager completes 125 cases per year, ICM manager salaries are $85,000, paid claims costs are $250 per member per month (PMPM), and the gap closure for annual claims costs of the managed population is 6 % (documented findings at a small Medicaid health plan). If savings from year 1 persist into year 2 in the initially managed population, then the cumulative projected savings is in the tens of thousands of dollars in year two and ROI greater than 10:1.

After the decision has been made to move in the direction of ICM, in general, it is best to pilot ICM in a population subset and expand based on the level of success achieved after initial implementation challenges have been addressed. Deployment starts by training two groups of health professionals in ICM: (1) the soon-to-be ICM managers (full ICM training, generally at competency level 3C or 4C (see Table 1.7)) and (2) the treating clinicians and ICM Medical Directors who will be working with them (physician training). Sometimes initially, but certainly as programs expand, a third group of support personnel for the ICM process may also be trained in core ICM principles. These individuals are called ICM manager assistants. They function generally at assist and support competency Level 1C or 2C (see Table 1.7) and can provide support activities that will increase the number of patients with health complexity that ICM managers can assist in achieving graduation. ICM manager assistants may have limited health-related backgrounds, fall into the category of peer support personnel, or be licensed individuals who are early in their careers and need "seasoning" before assuming the role of full ICM managers.

It has already been stated that the number patients with health complexity to whom an ICM manager can effectively provide assistance averages 150–250 per year. This is based on past experience in which managers of complex patients can be expected to carry caseloads no greater than 50 individuals who spend 3 months on average in active management before graduation (management inactivation). Thus, an average manager will be able to complete around 200 patients per year. Some patients will be in ICM for over a year, while for others, ICM activities will be completed within a month. Of course, the number completed has to do with the level of complexity of the population served by the sponsoring organization and secondarily with the types of cases assigned to the ICM managers. For some high need populations, generally with very high health service use, the ICM manager caseload may be no greater than 20 and the duration of management prolonged.

For most non-ICM management programs, the number of patients with whom the manager has "contact" determines manager success. In these programs, the number of patients that a case manager carries, albeit not necessarily those with health complexity, may expand to as many as 150 at a given time and the number annually "completed" be in the high hundreds. There is a temptation to use ICM managers in the same way, at least initially. As already discussed, ICM work processes are built on a different success premise, i.e., health stabilization and long-term cost reduction in complex patients. If ICM managers are assigned caseloads in excess of the number that they can effectively stabilize, then the value of the ICM program will likely be compromised. ICM success has less to do with the number of cases completed than the health status and stability of patients at graduation.

The success strategy of ICM needs to be reflected by the metrics with which ICM managers are assessed. Thus, there will no longer be an expectation of a certain number of contacts with a patient each month, calls made per day, or educational items sent. Rather, success will be measured primarily in terms of the clinical and functional changes that patients experience and in the amount of health-related services used over time. Secondarily, but nonetheless important, successes should also be reflected in the patient's level of satisfaction with care and the quality of life experienced by the patient. Each of these measures is quantified on the PCIP over time (covered in more detail later in the chapter). Of course, population contracts should be written to foster performance enhancement in these areas and to assure that outcomes are being tracked.

ICM Strengths

ICM was built with total patient health and cost outcomes in mind. Since standard care is sufficient to meet patient needs in 85 % seeking medical assistance, there is no reason to add specialized assist personnel to their care. For the top 5–15 % of the population with complicated illness and/or with interacting life circumstances that create barriers to improvement, ICM management can be of substantial benefit at virtually all levels of the health system continuum. Patients benefit by achieving better health with lower out-of-pocket expenses. Physicians benefit by being supported in achieving better long-term health for their patients. Care delivery systems,

Table 8.4 Strengths of ICM

- High patient and organizational clinical and fiscal reward potential since patients with high health complexity are targeted
- Fiscal reward contingent on health improvement, i.e., patient-centered health
- Defined comprehensive assessment, i.e., the ICM (PICM)-CAG
- Relationship-based with "measured" longitudinal total health stabilization across treatment settings
- Trained professionals systematically assist with multidomain, i.e., biopsychosocial and health system, issues based on ICM-CAG or PICM-CAG findings without handoffs to other managers
- Useable for patients with all diseases and in all health stakeholder locations, e.g., hospital and clinic systems, health plans, employers, government agencies
- Adult and pediatric capabilities

Table 8.5 Weaknesses of ICM

- Designed for use in patients with health complexity, i.e., targeted rather than full population-based active assistance
- Success measured in global health improvement and cost reduction and not process adherence documentation
- Total cost reduction may benefit patient and total system more than sponsoring organization
- Agnostic to regulatory and contractual mandates but addresses accreditation requirements with non-complicated customized organizational adjustments
- Success requires use of qualified and trained health professionals willing to adhere to ICM assistance paradigm
- Success requires longitudinal ICM manager assistance across treatment settings and clinical disciplines, including BH
- Often requires contracting strategy that allows ICM solvency
- Not a quick fix for isolated problems

as we move into an era of health and cost accountability for care, lower financial risk in some of their most challenging patients by improving the quality of care provided. Finally, insurance companies and the purchasers of care are able to lower total charges and population-based expenses for those they adjudicate or support. The strengths of ICM, which help accomplish these outcomes, are listed in Table 8.4.

ICM Weaknesses

ICM is not a panacea for all identified needs within the healthcare system. It also has several easily recognizable weaknesses (Table 8.5). Some of the weaknesses are mirror images of the strengths. For instance, since ICM is geared to alter outcomes in a small group of high need, high-cost patients, it does not meet regulatory or contractual mandates built on total population interventions, such as discharge planning for every patient (including the ones with excellent support systems) or disease management for all diabetic patients (including those in whom illness is well controlled).

As noted in the last bullet of Table 8.5, ICM is not a quick fix for isolated problems but rather tackles the need for health stability in complicated patients with the secondary potential benefit of reducing total healthcare costs.

The trick to effectively implementing ICM is to capitalize on its strengths and to minimize its weaknesses. This is where customization during initiation of ICM within an organization is put to the test. ICM attempts to efficiently accomplish big picture improvement of health for the most challenging patients in the sponsoring organization's system. It, however, does not address a number of the day-to-day conundrums that every healthcare organization and practitioner faces in meeting fiscal and regulatory needs while providing quality care to the populations they serve.

Physician Collaboration in ICM Programming

ICM derives its value from health stabilization in patients with health complexity. Since ICM managers are not experts in the treatment of patients, and especially those that typically require second- and third-line interventions before health improves, physicians are critical contributors to ICM success. They participate in ICM at two levels (Table 8.6):

1. As clinicians who understand ICM and collaborate with ICM managers in fostering outcome-based care, including care escalation, for their patients
2. As Medical Directors, who support ICM managers by serving as content experts when brainstorming about next steps is needed to assist patients not showing improvement from the interventions being used

Physicians serving in both of these capacities should have an awareness of ICM manager support capabilities and understand how they and their staff can maximize patient benefit achieved through them.

Table 8.6 Physician's role in working with ICM managers

- As a clinician
  - Understand ICM assessments (ICM-CAG) and the complementary nature of care plans to treatment plans
  - Share mutually informative patient information
  - Collaborate in supporting common patients' clinical improvement
  - Work with ICM managers and ICM Medical Directors in escalating care
- As a Medical Director
  - Understand ICM assessments and care plan methodology
  - Review ICM managers' cases, especially those not improving and those nearing readiness for graduation
  - Discuss intervention outcomes with ICM managers and the patient's clinicians and brainstorm on next steps for non-improving patients

Physician Clinicians

Primary care physicians will generally have closer interaction with ICM managers than specialists since they know their patients best and are responsible for their total health outcomes. Thus, they will want to capitalize on an improved understanding of the difficulties confronting some of their most challenging patients, such as through the ICM-CAG assessment, by incorporating identified barriers to improvement into their treatment plans. For instance, a patient may have an innate distrust of Western medical practitioners. In patients in whom this is uncovered, greater attention can be given to patient education and follow-up to insure adherence to treatment recommendations.

Further, ICM managers or the Medical Directors with whom they work may call upon primary care physicians to participate in discussions about the lack of anticipated health improvement with ongoing treatment, as documented through the ICM monitoring process, and the potential need for alternative approaches to care. Primary care physicians should see this as a value add, rather than an intrusion into the care of their patient, since it may speed symptom resolution and return to productive life [6]. For patients with complicated health situations, it represents an example of a diverse team working together on the patient's behalf. Of course, it is important for the ICM manager and Medical Director to respect the busy schedules of clinicians by using communication techniques that minimize unneeded interruptions and maximize value when verbal contact is required.

Specialists may also have direct and sometimes extensive contact with ICM managers, particularly when a patient's health is out of control, such as during inpatient admissions. In these situations, the ICM manager and physician interaction is similar to those experienced by the primary care physician. More often, however, specialists are tasked with correcting a particular health issue and then returning the patient to the primary care physician for continued care. From a specialist's perspective then, the ICM manager serves as a source of information about circumstances that may impact the specialist's intervention and also a facilitator of pertinent clinical information transfer during multi-physician involvement or transitions of care. Thus, active collaboration with the ICM manager should benefit both the specialist and the patient.

It is anticipated that ICM managers will become part of primary care and specialty medical teams within physician networks and ACOs in the future, such as through 2703 CMS reimbursement procedures. However, given the current structure of healthcare finance, physician exposure to ICM managers is more likely to come through their patient's health plan than the delivery system in which the physicians work. This is a direct function of the payment system in which we live. As long as the ICM manager is utilizing core ICM assistance procedures and is not involved in utilization management, substantial value can come to the patient through physician-ICM manager collaboration. The ICM manager's employer should not influence the level of enthusiasm of physicians to participate in the assistance by ICM managers. Until the current payment processes mature, it behooves clinicians to avail their patients to the services of ICM managers regardless of the origin of support.

Medical Directors

As previously discussed, until recently, Medical Directors have largely served as overseers or developers of healthcare assist and support programs or have been adjudicators of benefit review when treating physicians are called in utilization management programs. Other than occasional case conferences, health plan and care delivery system Medical Directors associated with assist and support activity have rarely participated in review and direct case manager support related to specific patients in the manager's caseload. Excellent research [6–8] and practical application of physician expertise [9] in serving those with high-end health needs now indicates that physicians play an important role in monitoring outcomes and assisting in moving from one type of treatment or level of care to another.

ICM managers capitalize on an improved understanding of the value that physicians bring in the ICM process. As sophistication about ICM management grows, physicians in the form of Medical Directors become a more important part of the management. ICM manager work processes will include their review of patient caseloads on a regular basis, participation in routine case conferences, and direct access to physician assistance. When performing caseload review and case conferences, Medical Directors assist ICM managers with patients in whom barriers to improvement persist despite appropriate goals and initial actions. While the assistance of Medical Directors brings the greatest value in the biological and psychological domains, they can also add to discussions about medical and/or psychiatric alternatives even when the main problem is in the social or health system domains. Through this collaborative effort by the ICM manager, the ICM Medical Director, the ICM supervisor, and often other members of the local ICM team, potential options can be discussed and a new care plan developed.

Sometimes new approaches can be initiated without participation of patients' treating practitioners, but usually the treating practitioner is a major contributor to suggestions on next steps. For these conversations, the ability for a physician-to-physician (peer-to-peer) conversation may improve receptivity in problem solving. The ICM Medical Director supports this process. Of course, it is necessary for the Medical Director to understand that she or he is not in charge of decisions related to the patient's care; thus, diplomacy during the conversation and deference to the treating practitioner's final decisions are essential.

Using this process, it is possible to keep treating practitioners apprised of the health status of their more complicated patients, to review where current intervention does not appear to be working, and to use collegial interaction to identify potential solutions. Sharing the ICM-CAG and ongoing CP with treating providers can truncate explanations and lead to relatively quick alternative approaches in these situations when they understand ICM methodology. For this, the "Understanding 'Complexity Assessments'" document (Appendix Q) developed to explain ICM procedures to clinicians could be used. While not always successful, this tactic is far better than allowing a patient with health complexity to remain ill and debilitated through inaction or poor understanding of what to do next.

It should be emphasized that the physician is only a player in this process. She/he will provide expertise from a "medical" perspective. Frequently, this needs to be coupled with expertise of the ICM manager or others involved in the ICM program that contribute non-clinical options that may not be in the physician's repertoire of alternatives. For instance, an ICM manager or even an ICM manager assistant may know how to access funds to cover needed medications for an indigent patient because they have familiarity with community support programs. The emphasis is on a team effort.

ICM Deployment

ICM is a comprehensive approach to complex patient assistance, which spans the entire healthcare experience for those assisted, regardless of location, practitioner, or type of care. Hospital and clinic systems, health plans, government agencies, and employers can provide the financial support for its use. Further, ICM managers can deliver their assistance face-to-face within clinical system walls; they can travel to participating patients' places of residence, so-called "feet on the street" ICM; they can perform assistance procedures through telephonic/video communication; or they can use a combination of these three. Each of these broad-based approaches to ICM will influence the strategy used in its deployment. At the heart of every program, however, are common preparatory activities necessary as ICM is deployed (Table 8.7) in order to improve the likelihood of ICM success.

Defining the Served Population

Since ICM is designed for use primarily in those with health complexity, the first step for an organization is to define the population or populations to be served and then to ascertain the initial triage procedures, such as suggested in Appendix A that

Table 8.7 Key components to consider during ICM deployment

- Clearly defining the populations and subpopulations targeted for ICM practices
- Educating stakeholders about ICM practices and anticipated outcomes
- Resolving conflicts posed by existing management services
- Changing to contracts that create an ICM win for the sponsoring organization, its patients, and the health system
- Establishing an ICM and other healthcare assist and support model coordination center with an organizational leader as ICM "champion"
- Hiring and training ICM professionals
- Training affected treating practitioners in ICM practices
- Establishing ICM triage procedures and work processes
- Initiating ICM practices

will identify patients most likely to benefit. For health plans, the populations chosen for ICM may equate to those with the highest claim amounts in certain books of business coupled with illness or treatment patterns identified through predictive modeling tools. For care delivery systems, populations may be chosen based on a combination of factors, such as patient geography, locations of service, patterns of health service use, number of doctors or medications, or insurance type or status. From these risk parameters, the hospital and clinic system may develop clinician-directed complexity algorithms, using patient registries when available, to choose patients in greatest need.

The principle is that ICM is a service available for patients having difficulty controlling their illnesses. Much like intensive care unit services, it is for the select few with illness burdens that are unlikely to improve without special attention. Many neglect this preparatory step until they are in the heat of deployment of ICM. They then come to realize that when an ICM manager carries too many patients or becomes involved with patients with low complexity, they lose the value they bring to patients with health complexity and the system. It is best to set expectations at the beginning for both the ICM managers and treating clinicians, who wish care support for "all" their patients, about caseload limitation and the complexity focus of ICM.

Educating Stakeholders

While it is the treating practitioners that are most affected by the introduction of ICM availability for their patients, there are a variety of other stakeholders, such as operational and financial executives, who must understand the process and value of ICM to the sponsoring organization. They will be the ones to sign off on the number of ICM managers available and the populations served by the program. If they do not understand how ICM contributes to the organization's mission and vision, their support for the program will merely be administrative, putting the program at risk as organizational fiscal challenges arise.

Other leadership in the sponsoring organization should also have a basic understanding of ICM and its value since they may identify special needs within their department that could be served by the ICM program or may need to contribute effort to improve successes of the ICM program. In the first instance, utilization managers, who should provide separate services from the ICM managers, often come into contact with patients demonstrating high need and high service use. These managers, therefore, could be a source of referrals to the ICM program. In the second instance, information technology specialists, such as those who problem solve for electronic health record systems, will likely be called upon to assist with the connection of ICM manager documentation to other sources of clinical information for patients in the clinical setting. Unless there is common knowledge of the role that ICM plays in the organization, deployment can be delayed or inadequately supported.

Resolving Assist and Support Model Conflicts

A common hurdle during deployment of ICM practices is the difficulty that professionals performing alternative types of healthcare assist and support activities have in transitioning to the ICM model, particularly when their existing management practices conflict with the theoretical framework of ICM. This is particularly true if portions of healthcare assist and support services are outsourced to other companies/vendors, such as regularly occurs with BH support services for medical organizations and medical support services for BH organizations. Another common source of conflict arises when assist and support services are service location specific, i.e., inpatient management *or* outpatient management. For situations in which models conflict, executive decision-making is often necessary for an organization to embark on a unified and coordinated approach to case management for targeted populations.

ICM does not lend itself to compromise in some situations. For instance, if a health plan chooses to use ICM for certain books of business, then contracts for BH support from BH vendors become redundant, if not counterproductive. BH service support is a core feature of ICM, thus standalone BH management is no longer necessary. In these situations, either the primary organization takes accountability for patient/member total management needs or the cross-disciplinary organization would need to train its managers in ICM procedures and become a part of a larger unified ICM management system. Necessarily, this would mean that those previously only performing independent discipline-specific management would need to become versed in support for the other clinical discipline through ICM training, just as managers of the sponsoring organization are trained to reverse multidisciplinary "total health" barriers to improvement.

At the hospital and clinic level, different dynamics are at play. Separation of payment has meant that hospitals have supported their assist and support personnel and outpatient programs have supported theirs, even though they target similar chronically ill patients for management services. From the perspective of ICM, the relationship of the patient to the ICM manager and continuity of ICM services across service locations are major factors in achieving improved health. While it is still possible to support independent inpatient and outpatient programs and yet deploy ICM for a subset of patients with health complexity, it is necessary to ensure that coordination of ICM and location-specific management services is part of the total health management process.

Coordination of ICM work processes with other forms of healthcare assist and support services is less cumbersome. For instance, an ICM sponsoring organization may continue a discharge management or transitions of care program to meet regulatory requirements. Conflicts between these models only arise when two managers try to perform similar assistance to the same individual. Thus, for management programs that don't conflict with ICM, focus is on the coordination of manager activities in concurrently run models. In general, ICM managers should assume responsibility for *all* management activities in a patient to whom they have been assigned until the patient has graduated from ICM since the comprehensive approach used in ICM includes virtually all subtypes of management assistance, including assistance with work reentry and health behavior change.

One strategy to overcome these barriers and conflicts is to build in measurement of value that ICM can bring through enhanced case management, such as with the PCIP. Once health improvement and cost savings are established as ICM is implemented, resistance tends to fade. Documented outcomes create a "win-win" scenario within larger organizations and go a long way to reducing or eliminating direct or indirect "sabotage" of ICM implementation.

Telephonic, Home-Based, and Clinically Based Case Management

Before passage of the ACA, health plans and employers were the primary financers for assistance and support services. Since these health stakeholders do not provide clinical care, the assist and support services they provide are primarily telephonic. Assist and support personnel or professionals initiate contact with members and employees remotely, for instance, as a part of wellness programs, health plan-based disease or case management, or disability assistance. Using this medium, consumers are enrolled, information is gathered, care plans are developed, and activities on behalf of the person being helped are provided. This remote member and employee contact is often associated with the sharing of educational information, either electronic via the Internet or in hard copy via the mail.

While there is concern among clinicians that "impersonal" telephonic contact will lead to marginal patient improvement, several studies demonstrate that telephonic case management can be effective in achieving both targeted goals, such as a reduction in readmissions, as well as global improvement of health conditions and reduction in the cost of care [10–14]. This is true even when providing assistance to patients with BH conditions in which one may expect greater resistance to or less engagement in telephonic communication. As long as attention is given to the importance of establishing a relationship with the patient, member, or employee, it is possible to engage and achieve health improvement.

Telephonic assistance and support services are equivalent to or have advantages over services provided in clinic settings (clinic based) or in a person's place of residence (home based):

1. Candidate triage and targeted enrollment can be performed using existing claims or employee databases and in some cases predictive modeling tools.
2. The components of assistance and support can be centrally defined and performance systematically assessed.
3. Case managers can participate in assist and support activities either in a central location or as a part of "virtual assist and support" teams from alternative geographically diverse locations, such as the case management professional's home or in other states.

4. The uniformity of the assist and support services rendered can be controlled and implemented so that consistent and meaningful outcomes can be measured.
5. The sponsoring organization/company can use data gathered on performance to inform the breadth of current and future management activity.

There are also disadvantages associated with the use of telephonic assistance and support. Perhaps the most important is that the health plans or disability/workers' compensation management vendors sponsoring telephonic programs often have little contact with the practitioners providing patients' care. This reduces the ability of physicians to both enroll patients in assist and support activities or engage them in the helper function, as physicians may not understand the potential value that could come to their patients or view such programs as interfering with their physician-directed care. To many physicians, assist and support programs are an imposition on their already busy day.

With the advent of cell phones, and particularly less expensive prepaid cell phone plans, patients' telephone numbers may change frequently. Thus, contacting patients by phone to initiate and conduct ICM may be challenging, particularly if the insurance plan or health system database does not contain the patient's updated information. Some health systems and insurance plans have developed creative methods for providing monetary and other incentives for patients/members to proactively update their contact information when changes occur.

Home visitation by case management professionals is another approach to assistance and support with evidence of value to patients [15, 16]. This approach is quite common among government agencies in which social workers or public health nurses regularly attempt to assist public program enrollees who have unstable residences, let alone access to a telephone. So-called feet on the street assist and support activities, while more labor intensive, allow managers not only the ability to find and engage high need clientele but also to directly visualize the life circumstances that may be contributing to persistent health challenges.

In fact, it is in these assistance programs that non-clinical barriers to improvement, such as housing support, often take precedence over clinical barriers. Further, they create an opportunity for the assist and support professional to identify barriers that might not otherwise be uncovered, such as smoke or dust in the home of a compromised asthmatic child or the presence of domestic violence. Frequently, when non-clinical barriers have been addressed, clinical improvement becomes less problematic. It is the up close and personal interaction of the case manager and the client/patient and/or their family that is the advantage of this approach to assist and support delivery.

The downside of home-based assistance and support is that it is time consuming and, thus, more expensive unless provided in discrete locations, such as a nursing home or housing project. Further, it requires attention to the safety of the case management professionals since those clients who benefit the most often live in locations where drug abuse and crime are common. Home-based assistance and support is generally reserved for those with the most challenging health conditions and fiscal impacts. A longitudinal total health and cost perspective, such as with ICM, constitutes a home-based model of assistance and support with a higher likelihood of reaping dividends. One creative solution here would be to engage community health workers (CHWs) to help facilitate the telephonic relationship with ICM managers and serve in an assistant case manager role.

Finally, assist and support services may be provided face-to-face in hospital or clinic settings. In the hospital, case managers would engage with patients at the bedside and, in clinics, as a part of usual office visit operations. Although one would expect that a clinically based approach is common, assist and support services usually are not reimbursed by payers and, thus, relatively few clinical programs have implemented them. There, of course, are exceptions, such as with discharge or transitional care programs. Systematic outpatient assistance and support, on the other hand, is unusual in most clinical practices. Poor financial support and limited understanding on the part of providers about how to operationalize value-added assistance and support, in part, explain why the recent AHRQ review of outpatient case management programs reports such limited improvement of health and cost [2].

Clinically based assistance and support programs have the advantage that treating physicians are directly involved in their deployment and can encourage patients to engage in assistance procedures. Given the long-term relationships with patients that are common in clinic settings, clinics are much better at engaging a higher percentage of patients than health plans. If physicians, however, are unfamiliar with case management practices that bring value, then their involvement could be a disadvantage. Common errors in clinics include:

- Trying to provide assistance services to the entire clinic population, rather than a high need subset
- Adding assistance and support services for staff who already have full workloads
- Failing to define assessment procedures, assistance activities, and outcomes to measure
- Expecting untrained staff to provide value-added assistance and support
- Defining success in terms of clinic efficiency rather than patient outcomes

Due to these errors, many clinically based programs are either ineffective or, at the least, inconsistent in providing value to their patient populations. For this reason, payers are often hesitant to financially support clinic-based programs.

Most versions of the assistance and support process involve a combination of the telephonic, clinically based, and home-based components. For instance, discharge management and transitions of care programs commonly begin with a face-to-face bedside encounter by program staff followed by several calls to the patient after release from the hospital. Home-based assistance professionals who see patients in their place of residence weekly may also attend clinic visits with a client/patient to make sure that they understand treatment recommendations of providers as they support treatment implementation with the patient.

ICM has the potential to be used in each of the three ways described above or a combination. Importantly, it can be used by collaborative organizations with staff trained in ICM methodology. For instance, some patients/members are most easily identified and supported through telephonic case management administered through a centralized health plan program. As long as the physicians caring for these patients are aware of ICM and its value, they can encourage their patients to participate and collaborate in the process. Conversely, a payer could support ICM managers in clinic settings where direct interaction with treating physicians would potentially bring additional value. The payer could collaborate with the clinic-based case manager by sharing information about non-clinic-based clinical service and pharmacy use, such as for patients with substance use disorders or somatization.

Contracting for ICM Services

Whether assist and support personnel are salaried or work on an hourly basis, they are accountable to meet performance expectations of the organization or client for which they provide service. In most situations, this means meeting work process, i.e., "volume," requirements. While many recognize that volume often does not equate with either quality or value, measuring performance based on tasks completed is the easiest, and often the only, way to assure assist and support personnel engagement with patient assist procedures. Further, it is a common mechanism through which regulatory bodies define requirements for external reimbursement.

ICM is not volume based. It is health outcome based over a more extended time frame. Thus, for ICM managers, it is no longer appropriate for them to prove their worth by the number of contacts and calls but rather by the outcomes that their patients experience related to the ICM process. As a result, contracts for ICM programs and the managers that they employ should reflect not the volume of patients that each ICM manager touches but rather the improvement in the five core multifaceted outcomes that they are able to achieve in the patients they do touch. This is why the patient-centered ICM performance (PCIP) is such an important component of the ICM program. It provides information about success for individual patients, for the ICM manager, for the ICM program (consolidated data for patients in the program), and for the health system (connection of consolidated data to that for the entire population).

Many healthcare assist and support contracts remain focused on volume. To the extent that volume remains the primary performance metric, ICM managers will be less successful with individual, high need, high-cost patients. Thus, new contracts are necessary for ICM and its managers so that they are rewarded for the desired outcomes generated as part of the ICM model construct, i.e., health stabilization and cost reduction in patients with health complexity. Further, measurement of these outcomes needs to be built into ICM work processes, such as with the PCIP, so that ICM managers are fairly assessed and rewarded for documented performance.

So, what would these contracts look like? First, payment for ICM services would be based on services delivered to individuals that fall into predefined high-risk population subgroups (Appendix A). Such patients would commonly have:

- High health service use
- Functional impairment and diminished productivity

- Presence of chronic illness and illness combinations, such as medical and BH comorbidity
- A high level of risk factors for poor outcomes such as:
  - Low socioeconomic status
  - Limited health insurance benefits
  - Many doctors and medications
- Dissatisfaction with their healthcare
- Poor quality of life
- Evidence of persistent illness/symptoms and treatment resistance
- High presenteeism or absenteeism (employees)

Second, the contract would have expectations for use of listed ICM procedures (see Tables 4.1 and 4.3) that increase the likelihood of enhanced total health and cost outcomes through reversal of clinical and non-clinical barriers to improvement. And third, a mechanism for documentation of multifaceted outcomes would be a core part of the management activities (see Table 4.6 and discuss below). Process measures would not, or at least minimally, be a part of the performance evaluation.

Under such contracts, there is greater likelihood of health and cost improvement if ICM managers were salaried with the potential for bonuses based on their ability to achieve measured improvement in the complex patients with whom they work. Appropriately constructed, this incentivizes ICM managers to help their patients succeed. In fact, once an organization establishes their customized bonus program, it can even become more sophisticated and add a "time to success" (pay for performance) component, which has been shown to speed improvement [6]. Success metrics would come from outcomes documented on patient PCIPs under the supervision of ICM leadership, including physicians serving as Medical Directors, who are aware of and can support the challenging work of ICM managers.

Determining the Location for the ICM Coordination Center

ICM focuses on the total health and total cost of those who participate in its assistance. ICM work processes make no distinction among inpatient, outpatient, or home care, or between medical and BH services. Working with patients as part of ICM requires involvement and longitudinal assistance in all of these areas. Thus, to the extent possible, those providing ICM services should be supported from a coordination center that is not specifically aligned with:

- An outpatient clinic system
- One or more post-acute care settings
- An inpatient setting or a group of hospitals
- A focal physician group
- A discipline-specific service location, such as in the medical or BH sectors

Rather, full service ICM requires coordination by leadership that spans treatment platforms and all medical and BH service locations. There can be focal subsets of service to less complex patients to meet contract or regulatory needs, such as discharge planning, in which selected ICM principles and practices can also be used, but these should be in the context of full service ICM.

In almost every setting in which ICM is supported, i.e., health plans, hospital and clinic systems, government agencies, and places of employment, the fragmentation of clinical services that pervades our health system can influence the way that ICM may be set up and coordinated. Great care must be utilized to insure that ICM practice with patients maximizes the ability of ICM managers to work in all treatment settings, regardless of the specialty of service. Improving total health and cost outcomes requires working across platforms.

The principle to be remembered is that ICM and ICM leadership, which has the greatest opportunity to bring value to high need, high-cost patients and the system being served, should assume a coordinating role for assist and support practices throughout an organization. Other assist and support systems used within an organization should defer to ICM program personnel when both may be appropriate for a given individual. They should be coordinated with ICM and vice versa. Regardless, ICM managers should have minimum difficulty in providing assistance services to assigned patients at all levels of care and in all disciplinary locations. Further, medical and BH managers should work within a single administrative framework and payment system, utilizing identical ICM work processes for all assigned patients, whether medical or BH issues are the primary reason for ICM referral.

Hiring and Training Personnel

ICM is an advanced case management approach to patient assistance. Only licensed or credentialed professionals with the ability to perform independent assessments, such as nurses or social workers, are candidates for training as Level II ICM managers (generally competency Level 2C through 4C; see 1.7) in ICM, which are the trained healthcare specialists that provide full ICM services. Level I ICM managers (generally competency Level 2C and 3C; see 1.7) understand the principles of ICM but either have not been trained in their use or do not work in settings in which ICM practices are implemented. Having said this, not all licensed or credentialed professionals wish to provide comprehensive ICM help to patients, which necessarily includes both medical and BH assistance. To do so requires an interest in addressing *all* health-related needs of those being supported and usually involves the development of a broadened set of clinical skills. It has been the experience of those performing training in ICM that there is an attrition of up to a quarter of those trained in organizations moving to the ICM platform since many medical-only and BH-only case managers are uncomfortable providing cross-disciplinary support for patients.

For this reason, one of the first steps in hiring ICM professionals is to attempt to ascertain if those applying are interested in learning the skills required to perform cross-disciplinary services that encompass all treatment platforms. Those who show reluctance to move into ICM's professional space should not be forced to undergo training but be reassigned to alterative professional activities or be encouraged/allowed to seek alternative employment options.

Even when this preliminary triage is used, there will remain a subset of those trained who do not possess the aptitude needed to effectively apply ICM principles. This is particularly true when the pool of potential participants includes those who have previously been benefit (utilization) managers. As mentioned earlier, benefit managers often have difficulty moving from an "adjudication, yes/no" function to a "assist and support, helper" function.

Once licensed practitioners interested in ICM participation have been identified, it is then necessary for them to read the ICM Manual [17] and receive training from an ICM instructor in the application of ICM principles and practices (see Table 6.1). Standardized knowledge acquisition and face-to-face training is available through approved integrated case management training programs for all levels of Adult and Pediatric ICM Managers, Levels I and II, and ICM manager assistants. With the *Physician Guide* publication, physician training in working with ICM Managers will also become available.

ICM work processes are not learned during standard professional training in any discipline since they include the use of specially designed assessment and intervention tools, yet they are necessary to learn for effective ICM deployment because they augment the ability of otherwise mature case managers to achieve improved health and cost reduction with patients. Thus, without exception, all case managers moving into the ICM support arena require full ICM training. This admonition applies equally to long-term and newly educated, less seasoned case managers. ICM training is essential for delivery of value-added ICM management services.

Finally, larger programs often wish to expand the reach of their ICM organizational managers by supporting their work through development of a cadre of organizational ICM manager assistants. Organizational ICM manager assistants may include licensed professionals who understand the core principles of ICM (Appendix T) but either do not have the clinical maturity to provide core ICM practices (Appendix U) in complex patients or have not worked in a setting in which application of core ICM practices were among standard business practices. Organizational ICM manager assistants can also include non-licensed personnel in a health discipline but who have been trained in ICM principles, such as trained peer support personnel.

Organizational ICM manager assistants complete the same components of training given to ICM managers, including reading the ICM Manual, sitting through the study sessions, and participating in face-to-face ICM implementation training. These assist personnel are in a position to expand the reach of ICM managers, both Level I and II, by contributing to management activities for patients participating in an organization's ICM program, e.g., performing triage duties, finding community resources, setting up appointments, checking on test results, facilitating transportation, etc. They, however, do not complete assessments, design care plans, document outcomes, or close cases.

Establishing Work Processes

It is not the purpose of this *Physician's Guide* to detail the activities of ICM managers since physicians are generally not responsible for the organization and administrative supervision of ICM managers themselves. For those who find themselves in this kind of role due to administrative assignments in their organization, they are referred to Appendix A of *The Integrated Case Management Manual: Assisting Complex Patients Regain Physical and Mental Health* [17]. In diagrams 1A through 1G, graphical illustrations can be found that delineate how ICM managers systematically perform ICM duties. These diagrams summarize the flow of patient triage and assessment, review how care plans are developed and ICM is iteratively performed, and describe the steps used to safely transfer patients back to standard care when health and life situations have stabilized to the point that ICM graduation can be considered.

Even ICM Medical Directors do not need the depth of administrative understanding about ICM manager work processes provided in the ICM Manual since they primarily support ICM managers by using their clinical expertise as a part of clinical case reviews. This is not an administrative supervisory relationship but rather one in which ICM managers and Medical Directors collaborate in brainstorming about next steps for those who are making limited progress despite initial actions, in deciding who is ready for return to standard care, and by providing a resource for direct communication with ICM patients' clinicians as indicated.

Physicians need an appreciation for basic characteristics of ICM workflows to work effectively with ICM managers (Table 8.8) and ensure that fidelity to the ICM model is being used.

Table 8.8 Core ICM workflows

- Total population triage to select ICM participants from those at greatest risk for poor outcomes
- Assignment to trained ICM manager within acceptable caseload parameters
- Completion of ICM-CAG (PICM-CAG) assessment
- Care plan goals and actions connected to prioritized complexity findings followed by systematic ICM assistance
- Communication with treating providers
- Outcome documentation using CPO and PCIP
- Escalation of care in collaboration with the patients' clinicians and the ICM Medical Director when needed until health stability is achieved or maximum benefit has occurred
- Graduation procedures followed when patient vulnerability is at an acceptable level for inactivation of ICM

Measuring Patient and Program Outcomes

There are two levels of outcome measurement systematically employed by full service ICM managers: (1) the care plan's measurement of progress (MP3—Appendix G) and (2) the patient-centered ICM performance (PCIP—Appendix S). The CPO follows outcomes specifically related to care plan goals. During the process of ICM, the CPO will progress from initial goals related to barriers to improvement that are most pressing, i.e., those scored as "3" and "2," to those in which there is less immediate need but nonetheless are important since their achievement will allow patients to remain stable after patient graduation. Often goals related to scores of "1" are more preventive in nature and are geared to helping patients take ownership of their health by developing behaviors associated with continued health stability.

The CPO is directly related to the care plan (CP), which lists targeted goals and the actions being taken to meet those goals. Often the ICM manager and patient will find that initial actions are not achieving the desired outcome. Since the goals are defined and actions can be checked off, it is possible to add actions or change the way that goals are defined when progression toward goals is not occurring. These activities are all a part of the ICM manager's responsibilities with the objective of reversing barriers to improvement over the course of ICM. Ultimately, the iterative ICM process allows closure of early CP goals that have been attained and movement to others until the ICM manager and patient are satisfied that most or all barriers have been resolved. That is the point at which case closure (graduation) occurs.

The PCIP, unlike the CPO, is not an ongoing assessment tool that remains open and adjusted based on actions that are completed and care plan goals that are accomplished. Rather, it is the ICM tool that is used to document "big picture" and meaningful outcomes of importance to the patient, their families, their physicians, the insurance company, the ICM sponsoring organization, and the health system. It is periodically revisited at intervals throughout the ICM process.

As previously mentioned, the PCIP includes measurement of five facets in the healthcare experience. Only one of these has to do with the illnesses experienced by the patient, i.e., the clinical outcomes. Three have to do with factors that change as health improves: (1) the ability to more fully participate in life (functional outcomes), (2) the need to use healthcare services (economic outcomes), and (3) the quality of life experienced by the patient. The final facet relates to an assessment of the patient's satisfaction with their healthcare experience.

At the completion of the initial ICM-CAG assessment, ICM managers work with patients to identify personal clinical and functional goals that they would like to achieve during the ICM manager's work with them. These "personal" goals are translated into measures that can be tracked over time. For instance, a patient's clinical goal may be to be free of depression, and the functional goal may be to reinitiate church volunteer work. At baseline, the patient may have two depression-free days a month and not even be attending church. Of course, the goals have to be realistic, given the patient's health condition. This is where the guidance of a trained ICM professional comes in.

In addition to the patient's clinical and functional goals, the ICM manager will likely have one or two more sophisticated goals of her/his own to add to the PCIP, which may or may not be related. For instance, knowing that the patient above has been seen in the emergency room several times and admitted once for obstructive lung disease due to nonadherence from debilitating depression, the ICM manager may add an FEV1 to a PHQ-9 score as clinical outcomes and "return to work" as a functional outcome to measure. At baseline, FEV1 is 35 %, PHQ-9 is 23, and days of work in the past 30 days, none.

To clinical and functional goals are added an assessment of health-related quality of life and satisfaction with care. The former may be measured as the number of days/week feeling well while the latter measured on a 10-cm visual analogue scale (VAS). If the ICM manager works for a health plan, it may be possible to use claims data to assess change in per member per month costs over time (last 12 months vs. next 12 months) as the economic measure. If not, then the number of emergency room visits per month, hospitalizations per year, or out-of-pocket medical expenses could be alternatives.

Finally, the ICM-CAG itself provides a good total look at the patient's change in barriers to improvement. The baseline score is the starting point and change over time the indicator of progress. Further, using the ICM-CAG, it is possible to identify areas in which barriers to improvement have not changed. For instance, a number of factors may have improved, such as the patient's living situation and control of psoriasis, but others, such as the approach to coping, which includes alcohol dependence, have not. Unless attempts are made to address significant risk factors, such as alcohol dependence, then gains may be lost shortly after ICM is discontinued. A tracked ICM-CAG can be a harbinger of the future for both the ICM manager and the patient's clinicians. This is usually captured in the "vulnerability" section of the ICM-CAG. To the extent that the ICM manager and the patient's practitioners can consolidate efforts to change residual barriers, they have the potential to assure a longer-term period of health stability.

Documenting Program Value

Patient CPs and CPOs for individual patients do little to document program value. Rather they confirm patient engagement in ICM and that the ICM manager is consistently working with her/his patients to reverse barriers to improvement. CPs and CPOs could be used to assess the efficiency of ICM managers in a program as they achieve change, but to do so would require a deep and detailed dive into the actual care plans of multiple patients by the same ICM manager. Further, assessing efficiency would require adjusting for the level of complexity of the ICM manager's panel of patients and for their level of motivation to improve their health condition.

The CP and CPO are better used for day-to-day work with patients. They provide ready access to areas of challenge during case review conferences and when it is helpful for a Medical Director to brainstorm with ICM managers as they uncover next steps in difficult patients. Further, they can be used retrospectively to review what has worked in the past when the same patient graduates but then reenters ICM due to new or recurrent problems.

It is the PCIP that provides the opportunity for assessing success of ICM at various levels. Its implementation at onset should be fundamental for all new ICM programs and a core feature of all mature programs. First, it can be used as documentation of success at the patient level in each of the five outcome facets measured. Second, it can be used to assess the success of ICM managers within a program by comparing PCIP outcomes for various ICM managers' patient panels. Of course, this will require standardization of outcomes measured by each manager in each facet of the PCIP or a way to normalize the measures used. Third, it can be used to document the success of the ICM program by consolidating outcomes for ICM managers providing service to patients. The obvious and easiest approach that can be used is a pre-post comparison; however, it could also be possible to set up a randomized controlled trail with appropriate human subjects review and approval. Finally, the PCIP could be used to document value of ICM in an organization by showing the effect of the program on total health and cost of care in the subset of patients with the greatest health risk.

It is the PCIP that allows ICM to document long-term outcomes. Of course, this is the direction that CMS intends for future healthcare to go. ICM is there to meet its challenge.

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Chapter 9
Connecting Integrated Case Management with Integrated Complex Inpatient and Outpatient Care

> *If you don't go after what you want, you'll never have it. If you don't ask, the answer is always no. If you don't step forward, you're always in the same place.*
>
> —Nora Roberts

Chapter Objectives

- *To dissect the challenges that patients with health complexity have in achieving health improvement in a fragmented delivery system.*
- *To describe the synergy between integrated case management and integrated care delivery.*
- *To share a vision of integrated case management for patients with health complexity when healthcare services are integrated.*
- *To discuss ICM managers' and collaborating physicians' role in advocating for complex care programs and, ultimately, systemwide integrated care.*

ICM and PICM are about assisting patients with health complexity connect the challenges in getting and then following through on value-added medical and BH treatments. Yet they live in a society and healthcare environment that does not recognize the many non-clinical and structural health system factors that produce barriers to improvement. While patients' life circumstances, such as low income, restricted social support, and limited education, are significant indirect contributors to getting timely and effective healthcare and require attention, barriers imposed by the healthcare delivery system are just as challenging, yet they commonly receive little attention.

Much has already been discussed about the importance for ICM and PICM managers to assess and concurrently address medical and BH conditions as a part of ICM and PICM work processes. The emphasis, to this point, however, has related to the synergy of BH and medical conditions, as well as the importance of nurturing a relationship between the ICM and PICM manager, the patient, and their caregivers or parents/guardians. There is another reason to train ICM and PICM managers to understand and assist with cross-disciplinary issues that patients experience without

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handing them from one manager to another, specifically the negative effect that ineffective or poorly coordinated management of medical and BH conditions has on total health outcomes and healthcare costs.

Traditional case management models focus primarily on medical *or* BH needs, depending on the origin of disciplinary financial support. With traditional programs, patients with concurrent medical and BH illness/needs are transferred between managers participating in uni-disciplinary programs. When this approach is used, communication between medical and BH managers, let alone clinicians, is truncated if it occurs at all. Further, medical and BH managers frequently pursue their portion of the discipline-specific assistance process as if the other did not exist.

Traditional case management consistently fails to identify cross-disciplinary needs and does little to coordinate services supporting improved health. As a consequence, traditional case management is generally ineffective in producing desired outcomes for patients with comorbid conditions [1]. The fragmentation of medical and BH care, perpetuated by independent medical and BH payment systems, contributes to compromised outcomes for those receiving assist and support services. Thus, patients with health complexity, 60–80 % of whom have comorbid difficulties, persistently experience limited health improvement and cost reduction.

Unfortunately, ICM and PICM managers are forced to assist with coordinated cross-disciplinary services in a system in which medical and BH professionals work in separate clinical environments; rarely communicate, whether by voice or in clinical notes; and seldom go to the effort of coordinating medical and BH care for patients. This lack of coordination between the medical and BH systems continues despite the fact that the interaction of these comorbid conditions leads to medical and BH treatment resistance and continuing high health service use (see Chapter 2). This chapter will discuss:

- How medical and BH services delivery is segregated in virtually all healthcare environments and represents a major health system contributor to poor health outcomes and high cost
- The connection of ICM and PICM effectiveness to ICM and PICM managers': (1) understanding of how to navigate the disparate medical and BH systems, (2) connecting cross-disciplinary practitioner-directed assessment and treatment, and (3) resolving non-clinical barriers
- The importance for those participating in ICM and PICM programs, including physicians, to advocate for health system transition to an integrated medical and BH care delivery model
- Fostering the development of two models of integrated care: (1) interim local health complexity programs and (2) systemwide medical and BH transformation to integrated care

This chapter addresses these topics from the perspective of physicians who are working with ICM and PICM managers but are impeded by the current clinical and financial disconnection of the medical and BH systems. To the extent that physicians and other treating health professionals can help ICM and PICM managers provide assistance in a more integrated delivery system, they will magnify the gains achievable through ICM and PICM work processes.

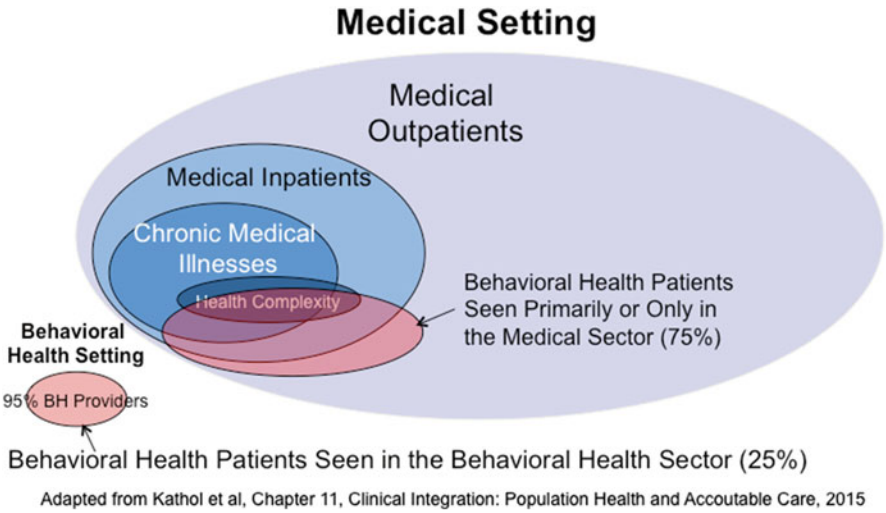


Figure 9.1 Seventy-five percent of behavioral health patients are seen in the medical setting

Fragmented Medical and Behavioral Healthcare Delivery

Medical and BH services have always been separate; however, since the introduction of managed care in the 1980s, this separation has become systematized and regimented. Even if medical and BH professionals desire to work together and communicate with each other, it is only possible in focal settings after creative work-arounds have been initiated with considerable financial challenges [2, 3]. The segregated payment system requires independent locations for care to be provided [4]. National and state laws also create barriers to medical and BH clinician communication [5]. In fact, medical and BH practitioners have worked in independent settings and used disparate work processes for so long that there are few with a vision of what an integrated system would look like, let alone how to operationalize it.

A segregated system wouldn't be so bad if not for the fact that nearly three quarters of BH patients choose to access healthcare services for BH care needs primarily or exclusively in the medical sector (Figure 9.1) [4]. Few BH specialists practice in medical settings because their insurance networks and reimbursement systems discourage it. Thus, two thirds of patients with BH conditions receive *no* BH treatment [6]. Of those who are treated, most is not evidence based [7, 8]. This is associated with persistent BH problems that never get addressed or resolved.

More importantly, however, lack of effective BH intervention leads to predictable treatment resistance for chronic medical conditions, increased medical complication rates, and high use of, primarily, medical health services [9–11]. Economically, the disconnection of medical and BH services is devastating. It is associated with doubling of average annual total healthcare costs for patients with comorbid medical and

BH conditions [12]. Fourteen percent of two hundred ninety-one million patients have BH conditions. Their care is supported by three common insurance vehicles in the USA, i.e., commercial insurance, Medicare, and Medicaid. These 14 % of the total population consume nearly 34 % of healthcare resources in the USA (see Table 2.3), equaling $536 billion of a $1.7 trillion healthcare spend. Eighty percent of this spend is for high cost and, in many situations, unnecessary medical care.

Most medical providers are unaware of just how drastically the separation of payment for BH services impedes access to and the coordination of medical and BH care. Data suggest that delayed BH service access stands out among all specialty services for patients with medical conditions [13]. The reverse, i.e., medical service access for patients with serious BH disorders, is just as evident [14]. While it is important to be aware of this disconnect, it is equally important to know that there are models of integrated medical and BH service delivery, both inpatient and outpatient, that are associated with improved health and cost outcomes [15].

Perhaps the best studied is the “collaborative care” outpatient model where physicians work in cooperation with case managers and other specialists to provide coordinated care for medical patients with comorbid BH conditions, especially depression. Over 80 controlled trials demonstrate that medical patients with comorbid depression receiving collaborative care have significantly more depression-free days and over $3000 lower total healthcare service use over 4-years post-intervention than a control group [16]. Recent studies using TeamCare, an enhancement to collaborative care, in which management assistance for diabetes and heart disease is added to depression, show that physical disorder outcomes also improve with the integrated approach [17, 18]. Similar, though less well documented, integrated models in other areas of the healthcare system have also demonstrated the ability to improve outcomes and decrease cost (Table 9.1) [15].

The fragmented medical and BH health system that is available for patients to use, as described above, does little to foster improved outcomes or cost savings, especially in patients with health complexity. The interaction of medical and BH

Table 9.1 Value-added program development

- Inpatient
  - Proactive complex case finding to direct psychiatry consultations
  - Delirium prevention programs
  - Complexity Intervention Units (CIUs) with medical and BH capabilities in general hospitals
- Outpatient
  - Primary and medical specialty physician training in the use of the physical symptom reattribution for unexplained physical symptoms
  - Integrated BH-primary and specialty medicine clinics
  - Proactive complexity case finding
  - Funded integrated case manager support
  - Screening and brief intervention for alcohol abuse
  - Primary care buprenorphine and integrated substance use disorder rehabilitation programs

Table 9.2 Health and cost impact of BH comorbidity in patients with chronic medical conditions

Patient groups	Annual cost of care	Illness prevalence	% with comorbid BH condition[a] (%)	Annual cost with BH condition	% increases with BH condition
All insured	$2920		15		
Arthritis	$5220	6.6 %	36	$10,710	94 %
Asthma	$3730	5.9 %	35	$10,030	169 %
Cancer	$11,650	4.3 %	37	$18,870	62 %
Diabetes	$5480	8.9 %	30	$12,280	124 %
CHF	$9770	1.3 %	40	$17,200	76 %
Migraine	$4340	8.2 %	43	$10,810	149 %
COPD	$3840	8.2 %	38	$10,980	186 %

Cartesian Solutions, Inc.™—consolidated health plan claims data

[a] Approximately 10 % receive evidence-based mental condition treatment

From Kathol R, Sargent S, Melek S, et al., Nontraditional mental health and substance use disorder services as a core part of health in CINs and ACOs, in Clinical Integration: Accountable Care and Population Health, 3rd edition. Virginia Beach, VA: Convurgent Publishing, LLC, 2015, with permission

conditions is most frequently seen in these patients and leads to persistent illness and high healthcare service use (Table 9.2) [4]. Due to the way that medical and BH services are currently organized, patients experience prolonged delays in accessing services, particularly when providers are members of noncommunicating provider networks. A minority of patients gets collaborative healthcare. Even then, much that is provided, especially in the medical setting, is not evidence-based.

Integrated Case Management (ICM) in a Non-integrated Delivery System

Little thought is usually given to the larger healthcare environment in which ICM and PICM managers work. Most attention is given to the mechanics of the ICM process, such as how to triage patients, who among those triaged should be asked to participate, how to longitudinally follow patients when management administration is confined to a health plan or clinic setting, how to connect information gathering and documentation to the assistance process, how long to keep patients in ICM and PICM, etc. These, of course, are all program components that require thoughtfulness and often problem resolution. They, however, fail to include discussion about how to help patients navigate a health system in which medical and BH services are so detached one from the other, as described above.

The first step, which has already been mentioned, is to find ICM and PICM professionals who are willing to take on the added role of providing cross-disciplinary assistance for patients. Once identification of this subset of case managers has been accomplished, approved ICM and PICM training helps initiate the process of understanding core features of common cross-disciplinary illnesses, as well as medical and BH delivery system differences that influence the effectiveness of integrated support services, e.g., overcoming regulatory and communication barriers, activating the emergency medical or BH system, etc. As ICM trained managers assist patients using ICM and PICM methodology, at 3 months they typically endorse “comfort” in doing cross-disciplinary work for common clinical problems, whereas after 6–9 months, they describe “facility” at providing clinically relevant cross-disciplinary ICM services with minimal guidance. Supporting actual healthcare, however, is only the start in cross-disciplinary work.

The impact of a separate medical and BH delivery system affects ICM and PICM assistance services at many other levels. For instance, medical and BH insurance products are often purchased from independent companies, i.e., managed BH carve-outs (MBHOs) or carve-ins (internally owned BH subcompanies within a “medical” health plan). Thus, a person may have excellent physical health coverage but limited or no mental health or substance use disorder coverage and/or access because the BH component requires care in BH, not medical, settings. While the intention of the ACA is for challenges in BH care access to occur less frequently, in fact, barriers to BH care access and treatment are just as prominent today as prior to 2008 when the Mental Health Parity and Addiction Equity Act (MHPAEA) was passed due to BH network inadequacies, the mismatch between where patients with BH conditions choose to access care versus the locations in which BH services are available, payment rates for BH providers, among others.

As a result, ICM and PICM managers must attend not only to a patient’s insurance status but also its usability in getting care, given medical and BH contract clauses specifying geographically separate care delivery and differential payment rules and rates. Since ICM and PICM managers are more “hands on,” at least initially, as they assist patients, BH challenges that patient experience will become evident as ICM and PICM managers make calls themselves on behalf of their patients and find out just how limited BH networks can be, their costs, and the delays in appointments when a BH network provider, who is accepting new patients, is finally found.

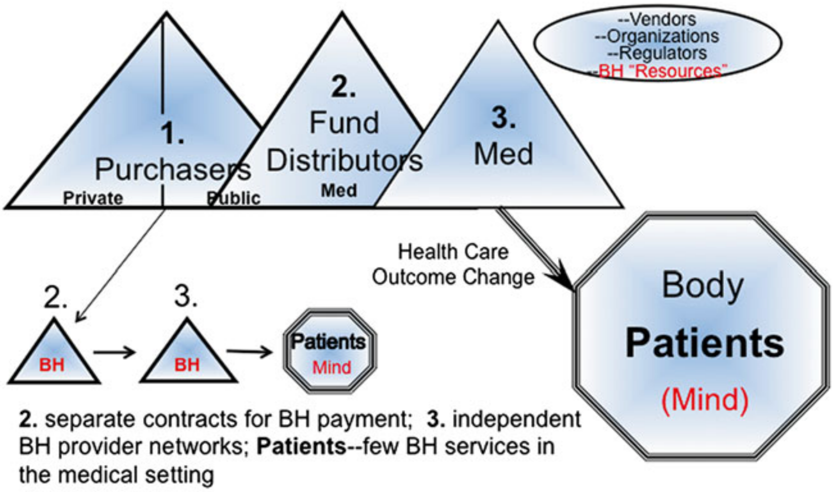
Another common challenge due to the segregated BH system is finding BH providers for patients with chronic medical conditions that are geographically convenient to see, i.e., collocated with appointments for the many and disparately located medical providers who patients also see. This is complicated by the fact that many commercial insurance and state Medicaid products do not allow same-day billing when medical and BH services are delivered in a common location. This introduces an additional expense for patients and a disincentive for BH practitioners to practice in a medical setting. Further, ICM and PICM managers often become the communication bridge for medical and BH providers since medical and BH electronic records (EHRs) typically do not speak to each other.

These examples illustrate the added challenge that ICM and PICM managers face in taking on medical and BH services assistance and support. Not only must they be willing to add this to their assistance challenges, they must also have sufficient appreciation for how the system handles these two health concerns so that they can proactively prevent delays in patient improvement due to care delivery fragmentation.

This complicated issue is of equal importance for the practitioners working with ICM and PICM managers, whether they are taking care of patients supported through ICM or Medical Directors providing backup to ICM and PICM managers. Treating practitioners must be willing to work with ICM and PICM managers and support cross-disciplinary communication and care coordination. Medical Directors must take on the added responsibility of brainstorming about solutions to "total health" challenges when desired outcomes are not occurring and communicating with both medical and BH treating providers is needed.

Integrated Case Management (ICM) in an Integrated Delivery System

As ICM and PICM are deployed nationally, the ICM and PICM managers, physicians treating patients with comorbid conditions who have benefited from ICM, and the Medical Directors who support ICM and PICM managers will have deep appreciation for the barriers created by the current segregated healthcare payment and delivery system (Figure 9.2). Thus, these professionals are in a prime position to develop and support transition to complex care delivery organization and system change leading to more efficient and effective treatment of comorbid patients with health complexity.



Adapted from Kathol et al, Chapter 11, Clinical Integration: Population Health and Accoutable Care, 2015

Figure 9.2 Siloed payment for and care delivery of medical and BH services (Adapted from Kathol R, Sargent S, Melek S, et al., Nontraditional mental health and substance use disorder services as a core part of health in CINs and ACOs, in Clinical Integration: Accountable Care and Population Health, 3rd edition. Virginia Beach, VA: Convurgent Publishing, LLC, 2015, with permission)

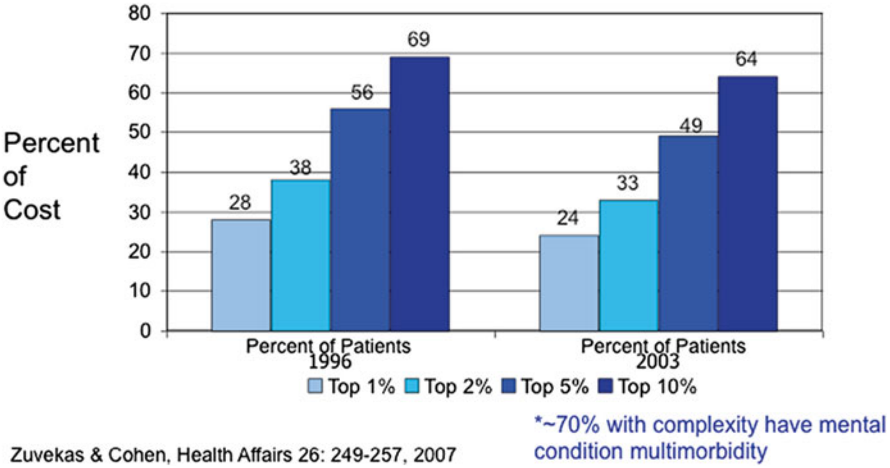


Figure 9.3 Percent of healthcare costs used by patients with health complexity (Data from Zuvekas SH, Cohen JW. Prescription drugs and the changing concentration of healthcare expenditures. Health Affairs 26: 249–257, 2007)

Importantly, such changes fit with worldwide interest in providing more effective and efficient care for the small percentage of patients using the majority of healthcare resources (Figure 9.3). For ICM managers and the physicians who work with them to impact the transition from our current system to one in which greater value is possible, however, it is important to share a general vision of what local integrated medical and BH care would look like and what its desired outcomes would be once it was accomplished.

Supporting Development of Organizational Clinical Services for Patients with Health Complexity

It is unlikely that systemwide integrated medical and BH service delivery will become available for a considerable time, despite recognition of the major impact that concurrent medical and BH illnesses have on patient outcomes and total healthcare costs. Thus, an organizational measure that can be considered on behalf of patients with health complexity, especially for healthcare delivery systems interested in remaining competitive as they become accountable for patient outcomes and cost, is to institute ICM and PICM programs that deliver more efficient and effective support for care in patients with health complexity. By working in programs specifically organized to address issues experienced by patients with health complexity, ICM and PICM managers would be able to bring the greatest value to some of the organization's most challenging and costly individuals.

A Business Case for Delivery System Health Complexity Programs

Why would accountable health systems, such as Accountable Care Organizations (ACOs), consider constructing health complexity programs? While interest in improving health for complicated persistently ill patients would be at the center of the rationale, examination of claims data from a 2008 population of over 6 million members consolidated from several insurance companies provides a compelling explanation (Table 9.2). In this population as a whole, members' paid claims amounted to $250 per member per month (PMPM—$3000 annually). The top 5 % subset of patients with health complexity paid claims for health services that amounted to over $2500 PMPM ($30,000 annually) and the top 2 % paid claims of $4000 PMPM ($48,000 annually). If a health complexity program could reverse use of health resources by 25 % for the top 5 % of patients with health complexity in only one primary care physician's practice, i.e., 125 patients (5 % of a patient panel of 2500), it would be possible to save over $925,000 during the first year. Similarly, savings from the top 2 % of two primary care physician's practices, i.e., 100 patients, would be $1.2 million.

Such savings would be at a level likely to translate into a return on investment (ROI), i.e., net savings related to program initiation, depending on the annual cost of the targeted health complexity intervention. Further, it is likely that several clinicians—as opposed to only one or two in the description above—would participate in the complexity program. Thus, economies of scale for health complexity programs, kept within the parameters of ability for programs to alter outcomes, could translate into greater savings for even larger numbers of patients. Strategically, health systems would also likely enroll groups of patients within their accountability for which health complexity likely affects a higher percentage with low reimbursement for services, such as those receiving public assistance. By targeting specific populations with higher healthcare costs and greater complexity, healthcare systems are likely to reap even greater financial rewards.

Building Organizational Health Complexity Programs

We are at a perfect point in the organization of healthcare delivery to consider the development of health complexity programs since health reform is focused on the Triple Aim, i.e., improving health, the healthcare experience, and the total cost of care. But what would such a program look like and who would sponsor it? Several initial decisions are necessary, such as where the health complexity program would be located, who would participate in delivering the care, how services would be reimbursed, and how patients would be identified and enrolled. Table 9.3 provides suggestions on where to start.

Once a decision was made to proceed, a transition plan with a timeline for completion would need to be developed. Organizational health complexity programs

Table 9.3 Visioning a health complexity center of excellence

- *Accountability*—"total health" delivery systems (ACOs; staff model health plans) responsible for health in targeted populations
- *Location*—general medical/pediatric settings with cross-disciplinary outpatient, inpatient, and post-acute care access
- *Treatment team*—primary care physicians, psychiatrists, ICM managers with clinical support personnel (nurses, social workers, pharmacists) and access to specialty services
- *Payment*—personnel, including physicians, salaried as part of a "total health" network of providers but with administrative flexibility to institute complex care best practices
- *Patients*—proactively identified patients with health complexity (treatment team controls enrollment)

initially would use practitioner-guided care delivery "work-arounds" since the healthcare delivery system would remain segregated. Essentially, this would mean that within their ACO or staff model health plan, professionals and staff in the complexity center would be able to accomplish objectives that are typically not possible during standard care or within guidelines of traditional insurance products.

For instance, in all health complexity program outpatient locations, collocated medical and BH services would be included as a part of standard care. Primary care and psychiatrist physicians would communicate and coordinate the treatment provided. They and the ICM managers with whom they share responsibility for outcomes would work as salaried professionals within a system that incentivized speed to health improvement for program participants. The level of administrative support staff for these central players would assure adherence to and completion of intervention and assistance recommendations.

In addition to outpatient enhancements, health complexity program doctors and ICM managers would remain actively engaged in decision-making and care interventions even when their patients were admitted to the hospital or post-acute care settings. They would work closely with medical and BH specialists, community programs, schools, and other health stakeholders to assure uniform understanding of their patients' many health challenges, the location of pertinent information about their patients, and the clinical and non-clinical support they could provide to speed recovery and maintain health stability.

Finally, the health complexity program would have the potential to "flex" availability of services that may not be available through their standard insurance coverage. This could include simple things, like bus vouchers for transportation to appointments or, more complicated and costly interventions, like support for substance use disorder treatment.

Ultimately, the goal of health complexity programs would be concentrated on improved health outcomes for patients with persistent medical and/or BH conditions who excessively use healthcare resources. More attention would be given to achievement of life and health-related goals, which are almost always associated with reduction in service use, as opposed to, billing and collections or denial of healthcare services to supported patients. This would be accomplished by providing "best practices" such as "calling" patients with normal testing results rather than having them personally “return to clinic” to get them since that will generate a reimbursement event, not otherwise available due to administrative or payment rules within the standard delivery system.

Variants of health complexity programs just described are currently being tested in the current healthcare environment and are showing targeted financial success [19–23]. Most of these, in one way or another, involve the use of case managers, care coordination, clinician-shared care plans, and the like. While they show promise for a small subset of the population, they are limited even in their ability to deliver a full panoply of integrated services that would bring value to their patients, such as substance use disorder treatment programs within medical settings [24], Complexity Intervention Unit services [15], or post-acute care facilities with medical and BH service support capabilities. The current health system is not set up to facilitate positive outcomes for patients with complicated health needs.

Supporting Systemwide Integrated Services for Complex Patients

Changing the medical system to one in which integrated medical and BH care is the standard is an advocacy function of ICM and PICM managers and the physicians who work with them. Unlike participation in the development of health complexity programs, which can happen in the short term, systemwide integrated service delivery for patients with health complexity is a longer-term initiative. It demands core changes both in the way that medical and BH services are paid and care is provided. By fostering integrated systemwide care delivery, however, ICM and PICM managers and the physicians working with them will substantially improve their effectiveness because facilities and treating providers will be in sync with work processes used by ICM and PICM managers.

ICM and PICM managers and their supporting physicians can advance systemwide change by influencing decision-making by three stakeholders in the delivery of care, i.e., purchasers, insurers, and providers. *Purchaser* participation in the transition to integrated care takes the form of demand for or creation of insurance products (including self-insured) that foster integrated service delivery for their constituents. Thus, ICM professionals can advocate on behalf of employees or public program enrollees for a move to health purchaser contracts that facilitate increased support for coordinated medical and BH services. There are specific components of insurance products (Table 9.4) available to employees and/or government program enrollees for purchase, which lead to improved coordination of medical and BH care.

Advocating for systemwide *health plan* integrated care change takes a slightly different approach. Participation in the transition process for these stakeholders begins with the consolidation of medical and BH benefits into a single “health” benefit. This means that segmented BH carve-in and carve-out contracts for care are replaced by medical health plan contracts in which BH services are part of medical

Table 9.4 Healthcare purchasers' contribution to integrated care

- Employers and government agencies design or endorse purchase of insurance packages for employees or enrollees in which:
    - BH services are paid as a part of medical benefits
    - BH and medical providers are part of a consolidated provider network
    - Treatment occurs in collocated clinical settings in which active communication and coordination of medical and BH services and providers is available without hassle
    - Performance is measured based on "total health" improvement and costs of the population served, not discrete medical and BH subsets
    - Healthcare quality projects include assessment of the delivery of collaborative medical and BH services

Table 9.5 Health plans' contribution to integrated care

- Commercial and government-sponsored insurers create consolidated medical and BH benefit products
    - BH services are part of all medical insurance products (carve-out and carve-in subcontracts are assimilated into a single medical insurance package)
    - BH services become a core part of medical benefits using a single medical and BH insurance number
    - Medical and BH providers work in a consolidated network
    - Medical and BH claims are paid using one set of coding and billing procedures, regardless of service or setting
    - Clinical and fiscal performance is measured as "total" population health and cost

benefits. Coding and billing procedures become unified. BH providers become members of the same network of providers as physical health practitioners. A single EHR houses all clinical notes. Care support for BH clinical practice in the medical setting becomes financially sustainable. Essentially, coordination of medical and BH services at all levels of care becomes a standard practice (Table 9.5).

Finally, medical and BH *providers*, which include both practitioners and treatment facilities, should become a part of the ICM specialists' advocacy initiative since they have as much to gain clinically and economically as ICM and PICM programs. Purchasers and health plans create an economic climate in which it is possible for BH providers to deliver services in the medical setting and to coordinate them with physical health services. This will require changes in practice patterns and business models at the delivery system level (Table 9.6). By advocating for this change, much BH care could be provided in inpatient, outpatient, and post-acute medical settings. Though smaller, a robust specialty BH sector would remain, much as concentrated care in other medical specialties, for those with serious and persistent BH conditions.

Table 9.6 Providers' contribution to integrated care

- Collocation of medical and BH clinicians in medical emergency rooms, general hospitals, multispecialty clinics, and post-acute care settings
- Provider contracts with health plans in which medical and BH are paid from the same "medical" budget
- Common medical and BH electronic health records (EHRs) with effective privacy safeguards for personal health information in both disciplines
- Downsizing and rightsizing of specialty BH settings with payment through medical benefits
- Value-added collaborative inpatient, outpatient, and post-acute care medical and BH care work processes are standard

Summary Comment

ICM and PICM are specialty programs that will increasingly contribute to health improvement and cost reduction for patients with health complexity in the future. They, however, do not provide service in isolation. Rather, theirs is a synergy between (1) the clinical and non-clinical assistance and support function they perform and (2) the clinical services that are directed at evaluation and treatment of medical and BH conditions. Unless these two complementary components of care work effectively together, the value that either one can produce will be limited. This chapter suggests interim and long-term steps to which physicians working with ICM and PCIM managers can be substantial contributors.

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Chapter 10
Physicians' Contributions to Building and Participating in a Population-Based Case Management Centers of Excellence

> *"Excellence is to do a common thing in an uncommon way."*
>
> —Booker T. Washington

Chapter Objectives

- *To explore the role of physicians in providing support for and ideas about the development and implementation of case management-based population health management initiatives that add value to the care of patients with health complexity.*
- *To illustrate how physicians can contribute to the creation of Case Management Centers of Excellence in integrated care delivery systems, using a lifelike scenario.*
- *To provide an example of how case managers and physicians collaborate in the process of bringing value to their patients with high need and high cost, to the care delivery system in which they work, and to the health system.*

Value-added case management has a bright future as a contributor to population health management. It utilizes trained health professionals to assist and support individual patients, identified using aggregate service use data related to an accountable population, with various levels of health complexity. In successful population health management programs, population-based work processes, including case management, are designed to achieve improved clinical, functional, and economic outcomes [1] in a healthcare environment that often retards, rather than promotes, health [2, 3].

Value-added case management is an adjunct to the hard work that physicians do in trying to directly improve disease outcomes. It focuses on reversing clinical and non-clinical barriers to improvement, the latter of which are considered peripheral to physician-based clinical diagnoses or the correct application of treatment. Case managers support the efforts of physicians by reinforcing patients' understanding of their illnesses, fostering adherence to evaluation and treatment recommendations,

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improving clinician communication, and other illness-directed activities. When attempting to enhance total health outcomes, they also accept responsibility for addressing personal, social, and health system (non-illness) challenges that impede patients' abilities to follow through on and/or to get needed care. It is through these additional activities that case managers often bring their greatest value to physicians and their patients.

But where does one start in setting up a comprehensive value-added case management program and what should be included? This, of course, depends on the sponsoring organization, the populations served, regulatory compliance mandates, and the definitions used to document program success. Too often, case management programs are designed to fill a parochial need, such as reducing 30-day readmissions, improving satisfaction scores, or complying with regulations to increase revenue, e.g., fulfilling requirements for participation in ACA section 2703-based care coordination for patients with chronic illness, while doing little to augment total health outcomes. Only occasionally will an organization or health system develop proactive value-added case management services with the objective of maximizing total health and cost outcomes as a part of their population health management program [1, 4, 5].

This last chapter in the *Physician's Guide* provides a glimpse of what the creation of Case Management Centers of Excellence in integrated care delivery systems might look like, with special emphasis on the physicians' perspective. Further, it suggests the areas in which physicians can play active and important roles in the support for and ideas about the successful development and implementation of value-added case management programs. In many situations, physicians will not be those taking primary responsibility for these programs. They, nevertheless, must understand them sufficiently to appreciate what does and does not bring value so that they can support programs that lead to better care and outcomes for their patients.

While this chapter provides only one scenario among many that could be developed, it is intended to offer physicians, administrators, and other health practitioners a vision of what value-added case management might look like in a clinically integrated network positioning itself as a competitor for population-based health contracts. The scenario is formulated so that the developmental processes used could be generalized to other organizations and settings.

The Scenario: Why a Case Management Center of Excellence?

Synda, the Chief Executive Officer (CEO) of a seven-hospital care delivery system in a large East coast city, and Matthew, the Chief Medical Officer (CMO) of the hospital system and CEO for the associated physician-directed ACO, had been proactive in responding to a changing healthcare environment. They worked well together. Synda knew that it would be necessary to transition to what the industry was calling "value-based" care in order to be a successful healthcare system after full implementation of ACA reforms. She worked well in coordinating the administrative and financial pieces, while Matthew remained abreast of best practices and care transitions that would position Patterson Health Systems and its ACO partner, the Patterson Physician Network, to compete for population-based global health contracts in the future.

In the past 5 years, the two had strategically paired expansion of Patterson's patient-centered medical home (PCMH) footprint with inpatient and outpatient Electronic Health Records (EHR) communication capabilities, thus achieving more efficient and less duplicative outpatient care and a 7 % reduction in inpatient admissions for their Medicaid Shared Savings Program (MSSP) and other total risk populations. They were careful not to transition too rapidly so they could maintain financial viability, but they understood that transition was necessary, given the increasing prevalence of population-based payment and clinical delivery systems.

They had implemented a stepwise approach to migrate from traditional fee-for-service contracts to population-based global health contracts. This year global contracts accounted for 30 % of Patterson's business. However, their analyses projected that greater than 50 % of Patterson's contracts would be based on global payments within 2 years. It was anticipated that over 90 % would be population based within 7 years, including those for patients covered by commercial insurance. Synda and Matthew were well positioned. Value-added cost-saving services within the Patterson system would be the competitive edge that kept Patterson afloat.

They had no delusions that there would be pain during the transition, including a reduction in or redistribution of staff, a lower systemwide inpatient bed complement, more efficient (lower cost) specialist and super-specialist contracting, and a need for physician education about the ultimate value that would be experienced by Patterson patients (culture change). Some of the pain was already felt. Synda and Matthew recognized that the new healthcare law of the land, the ACA, was far from perfect, but they were dedicated to ensuring that Patterson Health System patients experienced individualized healthcare that resulted in the best health and cost outcomes that population health management could produce.

More recent initiatives included (1) several new clinic-based chronic disease management programs, such as for those with diabetes mellitus, asthma, and congestive heart failure; (2) a wellness program for employees, which expanded to the larger Patterson patient population; (3) transitions of care programs for all patients discharged from Patterson system hospitals; and (4) the addition of behavioral health social workers as part-time onsite contributors to Patterson's PCMHs.

A Deep-Dive Financial Analysis

As a part of their preparation for competing in a reformed healthcare marketplace, Synda and Matthew had taken a deep dive into Patterson's administrative database. Consistent with the national literature, 5 % of Patterson patients used over half of what their system was paid for service utilization. Patients at Patterson, of which

Bob (Chapters 1 and 2), Lokandra (Chapter 3), Elina (Chapter 4), Johnny (Chapter 5), and Yolanda and Renaldo (Chapter 7) would have been a part, surfaced with conditions that were high cost, difficult to treat, and in need of better health (and cost) outcomes, i.e., those with health complexity. Many patients like those described in earlier Chapters falling into this high-risk, high-need group were self-pay or covered by public program insurance contracts with poor reimbursement rates. The early Patterson population health management initiatives described previously had improved efficiency and cost for the population as a whole, but this group appeared recalcitrant to changes made thus far.

Synda and Matthew noted that nearly 75 % of the identified 5 % of high cost complicated patients coded positive for a "secondary" behavioral health (BH) condition. Further, the population often received care in the most costly parts of the Patterson system, i.e., the emergency room and Patterson's hospitals. While many of the patients were assigned to Patterson's PCMHs, it was apparent that few used them regularly. Those who did tended to be seen in clinics with rotating physicians, such as resident physician clinics. Only a small number received what would be considered true provider-based care continuity.

Additionally, Patterson had historically steered clear of BH service delivery in its largely "general medical" system. Patterson had preferred to send its BH patients to public sector-dedicated BH programs. Patterson had little experience in coding and billing to complicated and completely separate BH payers. Further, its leadership did not want to subject its bottom line to historically marginally solvent health programs, such as BH inpatient and outpatient care.

This meant that Patterson patients often experienced long delays in getting BH care or received none due to the magnitude of hassle and frustration associated with the public programs. However, until the ACA there was little reason for Patterson to add BH services. In fact, poorly treated patients with BH comorbidities increased Patterson's "medical care" profit margin in the fee-for-service practice environment since these patients, on average, used twice as many medical healthcare services [6, 7]. The ACA changed this dynamic: better management of these same patients was now core to Patterson's financial success. Unless costs for this subset were lowered—80 % of which were for medical care—Patterson's profitability would be challenged.

Synda and Matthew were entering a new world of payment, one in which the total cost of care, including BH care, was the responsibility of their ACO. Excess medical costs associated with BH comorbidity now affected the bottom line. Unless they figured out a better way to effectively and efficiently address BH issues at Patterson Health System, they would have difficulty altering total health outcomes and costs, particularly for the 75 % of patients with high utilization and BH comorbidity.

Synda and Matthew were exploring ways to bring better BH care into Patterson's medical settings, the location with the greatest potential for improved health and cost savings. To date, the majority of BH consultants they approached discussed access to existing, or the development of, stand-alone BH services for Patterson's medical patients. These consultants minimized robust epidemiologic studies showing that nearly 80 % of patients with BH issues refused to enter the BH health sector for their BH care [8–11]. Thus, 70 % of such patients remained untreated. Of the

30 % treated in the medical setting, only one in nine received care that would be expected to change clinical outcomes [12, 13].

Recent literature discussing the importance of and strategies for introduction of BH services in medical settings as a part of ACO formulation suggested that alternatives were available [14]. Synda and Matthew were looking into these. In the meantime, both knew that addressing the total healthcare needs of the small percent of the population with persistently high healthcare service use, perhaps through targeted case management, represented potential low-hanging fruit.

Opportunity Knocks

Lana, the Chief Nursing Officer (CNO) for the Patterson Physician Network, was in charge of general assist and support services for the ACO. Allie was the head of Social Services for the Network. She supervised the inpatient and emergency room social workers who provided assessment and support services to hospital clinicians. Both Lana and Allie were present at the Patterson executive leadership meeting when results of the financial assessment of Patterson's patients with high service utilization were presented. At the meeting, Synda and Matthew expressed openness to suggestions that would lead to better health and cost outcomes.

Lana and Allie had talked with Matthew on several occasions about moving to an advanced level of assist and support services at Patterson, but those discussions were never relayed to Synda. Current assist and support services, called "care coordination" at Patterson, were not centralized; were delivery location based, e.g., mostly inpatient or outpatient; rarely communicated what they were doing; and had no longitudinal "total health outcome" measurement component. Lana and Allie's suggestions always seemed to fall on deaf ears. Until now, other Patterson priorities had taken precedence.

Allie and Lana looked at each other. After many years of helping patients in a fragmented medical environment, both were up to date on advances in case management during the last decade. They had discussed how to structure a coordinated value-added program at Patterson if given the opportunity [15–19], and their most recent plan was to find the right moment to suggest the development of a Case Management Center of Excellence. Leadership had to see a need. They were ready with a solution.

Now was the time. Lana and Allie approached Synda and Matthew after the presentation to indicate their readiness to present some innovative suggestions. They requested several months' lead time prior to presentation of a proposal. This would allow them time to gather input from Patterson physician leadership and then to formalize their draft of a comprehensive case management program into a concrete proposal. Between now and their more formal discussion with Synda and Matthew that would hopefully lead to an ACO presentation, however, they requested access to and the assistance of the financial staff who had worked with Synda and Matthew in performing their deep dive. The request was granted.

The Case Management Center of Excellence Proposal

Lana and Allie were chosen for their positions of responsibility because of their expertise in nursing and social services and for their leadership ability. That they were ready to submit a plan when this opportunity arose is a testament to their understanding of case management and the organization in which they worked. The clinical and administrative teams they had built in each of their departments had previously contributed to the development of the system-based case management draft proposal.

Both, however, knew that without buy-in from members of the Patterson Physician Network and physician groups that contracted with the Patterson Health System, the program they had in mind was unlikely to be adequately supported. For this reason, they wanted to set the stage with key physician leaders before their meeting with Synda and Matthew. Thus, Lana and Allie's first step was to provide a summary of their previously sketched proposal to physician leadership, get their reaction and suggestions, and enlist their support.

For the next 6 weeks, they presented the draft proposal and asked for advice from the Director of primary care, the Medical Director for the Patterson Physician Network, decision makers in adult and pediatric primary care and multispecialty clinics, leaders of hospitalist groups in each of the Patterson hospitals, the few BH professionals participating in Patterson's inpatient and outpatient BH programs, emergency room Medical Directors and involved personnel, and practitioners servicing patient needs in post-acute care settings. It was a busy month and a half.

Physician Input into the Center of Excellence Proposal

The proposal was not a hard sell. Most of the physician leadership recognized the need for additional support for high-need, high-cost patients through care coordination. The problem was that there was no consensus among them about what constituted "care coordination" or how it should be structured. Many seemed to have "pet" projects, such as those working in clinics in which selected nurses carried "case manager" designations or specialty clinics with disease management programs, but little understanding about the case management work practices required to change outcomes for patients. Lana and Allie's presentations/discussions were a mixture of education about recent advances in assist and support services and recommended actions for the Case Management Center of Excellence at Patterson Health System.

Most physicians came around to the rationality of creating a systemwide case management inpatient and outpatient program designed to improve patient health outcomes and secondarily reduce total service use, especially in patients with health complexity. When population health and financial facts, uncovered by Synda and Matthew, were coupled with concrete value-based case management recommendations, such as the development of adult and pediatric integrated case management (ICM/PICM) for complex patients, it was possible to marshal support from critical physician leadership. Of course, the physicians also provided wise counsel, which was incorporated into Lana and Allie's proposal, such as retaining most components of the transitions of care program, maintaining the payer approval service for patients at discharge, and coupling existing disease management programs to new practices that had greater likelihood of outcome improvement.

Physicians were assured that case management changes in the Patterson Health System, if approved, would be stepwise. However, it was imperative that new programs be initiated, at least as pilots, and that existing programs be reviewed for value to the Patterson Health System without delay. While all key physicians wanted to have a better appreciation for the cost of the case management additions, the anticipated influence on health outcomes, and the potential effect on their corner of care delivery at Patterson, physician decision makers were generally in agreement with the direction proposed by Lana and Allie.

Center of Excellence Proposal Design

After completion of their dialogue with physician leadership, Lana and Allie worked together with James, the assigned financial staff person, as they reviewed Patterson's assist and support footprint with costs and outcomes. There were multiple disconnected adult and pediatric programs at Patterson falling under the general rubric of care coordination. Some were clinic based and others were hospital based. Clinic-based programs fell into two broad categories. In one version, existing clinic nurses would add the title of "case manager" to their already extensive job description. They were expected to fill spare time with reminder calls to patients about prescriptions or ensuring that they had followed through on specific recommended assessments or treatments. Performing these additional responsibilities required time and effort in an already full day. Occasionally time allowed.

The other clinic-based care coordination program included educational and adherence support disseminated through Patterson's many primary care and specialty clinics for patients with adult and pediatric chronic medical conditions, such as diabetes, asthma, and heart failure, among others. Each program had its own protagonists and delivery approach. Levels of involvement by assist and support personnel with patients varied widely based on program objectives, financial support capabilities, and conflicting clinic responsibilities. All programs were dedicated to providing outpatient assistance. None followed patients into inpatient settings, other than occasional reports to inpatient staff. Virtually all targeted specific illness-related activities with little attention directed to patients' personal, social, or health system issues.

Hospital-based assist and support programs also fell into several categories. Many managers were a part of the care transition program. They made a discrete number of timely calls to patients and practitioners after hospital discharge. Calls ensured that prescriptions were filled, clinical information was transferred to appropriate providers, and follow-up appointments were attended. Other managers spent their time obtaining payer approval for post-discharge placement or purchasing durable medical equipment (DME). Still other managers, especially social workers, performed emergency room and admission assessments to capture information pertinent to the patient's condition from family or other sources.

Each brand of manager performed discrete "case" or "benefit" management activities that were time limited, with the intent of fulfilling specific administrative or clinical needs. None were targeted specifically for patients with health complexity. None performed case management assessments, as defined by the Case Management Standards of Practice, from which individualized care plans could be developed. Active involvement in manager-patient interactions typically lasted a week or two, though monthly or bimonthly "checkup" calls were commonly recorded to document manager productivity.

Based on the information shared by Synda and Matthew and their professional understanding of new value-based case management models, as well as discussions with physician leadership, it was obvious to Lana and Allie that some current assist and support activities filled Patterson Health System needs and would be retained, while others could be enriched both by adding consistent value-added components and coordinating these programs with others in Patterson's system. For instance, post-discharge placement and DME authorization procedures should continue in order to ensure financial support for post-acute care. The care transition program had also demonstrated an ROI for Patterson and had put the health system nearer to compliance with national readmission standards. In their current configuration, these programs added value. Other programs merely enhanced the patient's clinical experience but did not consistently incorporate activities that would change patient outcomes or save healthcare resources.

From Lana and Allie's perspectives, the disease management programs, the wellness program, and outpatient isolated case management activities would need thoughtful reconsideration. Were they adding value? Were there other areas of assistance and support that would bring greater value?

Importantly, the current cadre of management services at Patterson was not directed specifically to improve outcomes in the 5 % of the patient population identified by Synda and Matthew. Since Patterson provided health services to nearly a million people in its geographic area, due to the expense and effort, it was doubtful that a fully developed outcome-based case management program would be in the cards without evidence for success specifically within the Patterson system. Thus, Lana and Allie decided to work with James in suggesting a pilot program in selected adult and pediatric settings that had the ability to readily document patient-centered improvement and the program's financial performance.

The Case Management Center of Excellence Proposal

Lana and Allie found the Case Management Center of Excellence draft proposal relatively easy to update and finalize because both had been working on it for some time. Both knew it offered something new for the Patterson Health System.

Further, the Patterson Physician Network and other key care providers had provided tacit endorsement for the proposal's core components, pending administrative review. The proposal consisted of the following elements:

- Consolidation of inpatient and outpatient assist and support activities throughout the Patterson Health System under a central Patterson Physician Network ACO Case Management Service Line.
- Deployment of 35 new medical and BH case management professionals (five per hospital geographic region) trained in and utilizing the ICM program. In addition to their adult training, 6 of the 35 case managers should receive training in pediatric ICM (PICM). All new case managers would address the needs of an identified subpopulation of patients in the health system with the greatest complexity and highest service utilization. Further, patients with health complexity would have a *single*-case manager, regardless of treatment location within the health system, for all medical and BH assistance and support necessities.
- Continued support for personnel completing insurance authorization procedures for all health system patients. To avoid confusion about their role and responsibilities compared to the ICM/PICM and other case managers, they would receive new titles describing their Patterson contribution, such as "admission and discharge authorization specialists." For complex patients assigned to ICM/PICM case managers, the admission and discharge authorization specialists would provide discrete authorization-related services that complemented the ICM/PICM manager's work.
- Continued support for personnel in the transitions of care program but with the new title of "care transition managers." These personnel would support all health system patients transitioning between treatment locations, except those previously identified who were working with an ICM/PICM case manager.
- Continued support for social workers who gather pertinent clinical and nonclinical information from second sources at the time of admission and assist with discharge preparation for identified health system patients. They would be called "inpatient social support professionals." For the identified subpopulation of complex patients, they would complement the work of the ICM/PICM case managers already involved in their care.
- Outpatient and inpatient assist and support activities currently available in the Patterson Health System, but not mentioned in the core Case Management Center of Excellence elements above, would be reviewed by the Patterson Physician Network Case Management Service Line leadership team for consistency of value-added services and connection with other clinical and assist and support programs within the system. Special attention would focus on lower-level support and assist activities, such as patient education, that may be completed using technology or disease advocate groups. Adjustments to those programs would be made after review and total Service Line formulation.

James examined the core elements of Lana and Allie's Case Management Center of Excellence Proposal. From a financial standpoint, the programs required to meet Patterson's contractual and other needs would remain in place, i.e., admission and discharge authorization, care transition, and social work support for admissions and discharges. For these, there would be no changes in cost associated with keeping services in place. Other existing assist and support programs would be reviewed for their value to patients at Patterson. Some would continue and others would be withdrawn under the direction of the newly formed Case Management Center of Excellence Service Line. Changes to these assist and support programs also would be cost neutral, but with the potential for savings as programs were redesigned or discontinued.

The only new program was the one dedicated to improving outcomes for the 5 % of the population identified through Synda and Matthew's administrative assessment. James knew that the annual revenue for the million patients treated in the Patterson system was approximately $3 billion. Currently half of that income was associated with Synda and Matthew's 5 %. They used ten times the number of medical services that Patterson's patients as a whole used, i.e., on average $30,000 annually. To the extent that the program outlined by Lana and Allie could reverse service use by only 10 % for the anticipated 7000 patients to receive ICM/PICM services (approximately 200 patients annually by each of the 35 case managers), it would be possible to reduce service use by $16 million *after* the $4.5 million in program costs was subtracted. As global contracts assumed a greater market share, much of this revenue from savings would come back to Patterson since the service delivery variable costs of the fixed global budget would decrease for the population served. To the extent possible, fixed costs could also be gradually ratcheted down. For instance, beds in several hospitals had already been made "inactive" due to the reduction in admissions with early quality programs. Finally, much of the savings would come from improved care to patients in public programs or who were self-pay. These were patients for whom profit was limited to start.

James was on board with the proposal from a risk/opportunity perspective, and he shared his findings and impressions with Synda and Matthew prior to their meeting with Lana and Allie. Projections conservatively suggested a potential for 2:1 to 4:1 ROI in the first year with greater savings thereafter, presuming sustained gains in subsequent years for those who completed the ICM/PICM program. Importantly, both clinical and economic outcome measurement were built into the ICM/PICM program that Lana and Allie were suggesting. Patterson would know the impact of program deployment on health and cost outcomes in a timely fashion.

Center of Excellence Review and Approval

It was well that Lana and Allie involved James and Patterson's physician leadership as they finalized their proposal for Patterson Health System. It was 3 months from the day that they had heard Synda's and Matthew's presentation at the Patterson leadership meeting. Now the spotlight was theirs. Prior to their presentation, they had received signoff from Synda, Matthew, and the ACO's administration. It was now time to sell the program to Patterson's network of providers. There would be dissenters, especially from those providers whose programs had less evidence of value and were at risk for replacement, but, in general, Lana and Allie were optimistic about the response they would receive.

Lana and Allie tag teamed during the presentation in which core programmatic features were listed and discussed. They were careful to point out the ways in which their proposed program balanced the desire for health system value with patient and clinician needs. Some components would have higher likelihood of clinical and/or financial success than others. Further, they stated that some existing programs would receive close scrutiny once a decision had been made to move forward with the Case Management Center of Excellence. Some programs may be restructured or replaced.

Both were familiar with the arguments against their proposal and discussed each major objection in turn. For instance, several providers had expressed the need for "total" population case management support, i.e., any who were considered by their clinicians to need case management, regardless of level of complexity, should have access. To this, Allie shared a fact about case management, i.e., that assist and support services were valuable to virtually any patient with any level of health condition, including healthy individuals needing encouragement to pursue healthier behaviors. She argued that if the program being suggested was applied to the entire population, the costs would be exorbitant with minimal gains in health outcomes. Instead, she suggested resources should be targeted for those who would receive maximal personal benefit. Incidentally, this is also the population that would provide the greatest opportunity for Patterson Health System to align with Berwick's Triple Aim [20].

Lana addressed another oft-verbalized objection, i.e., that inpatient, emergency room, and outpatient assist and support services should be independently managed. Traditionally, this had been the way that care coordination services had been organized, and there were differences in desired outcomes in the various settings. To this objection, Lana shared the origin of the separation of inpatient and outpatient care coordination, i.e., the financial independence of hospital and outpatient provider services prior to the ACA, and the importance of reconnecting this fragmented approach to care assistance and support within an ACO, especially for those with health complexity. She pointed out that several of the Center of Excellence proposal programs continued to be focused on specific delivery locations in the health system, such as inpatient social services support. However, recent experience had proven the value of assist and support services that linked fragmented health system components, such as effective inpatient-outpatient care transition programs [19, 21].

At the end of the Patterson leadership meeting, Synda and Matthew announced that Patterson Health System would move forward with the development of a Case Management Center of Excellence and its component parts. Concerns that would have derailed the proposal had not surfaced. Lana and Allie received a round of applause, but both knew that their work was just beginning.

The Case Management Center of Excellence

Nothing moves rapidly in a health system as large as Patterson, but it was evident that the administration and medical leadership considered the Case Management Center of Excellence a priority. There, of course, were competing interests, but to delay development of the complexity-based ICM/PICM program with its potential contribution to Patterson Health System's bottom line was folly. Upfront costs, though in the millions of dollars, were inconsequential when compared to Patterson Health System's billion-dollar budget and the potential impact of the new services on future profitability and population-based global contracting competitiveness.

Rollout of the Case Management Center of Excellence

Within a year, the ICM/PICM program had been deployed at Patterson. Program initiation had been mapped on a Gantt chart, implemented by Lana and Allie with support from Center of Excellence Service Line team members, and monitored by Synda and Matthew. As expected, the change was not without controversy and resistance. Lana and Allie started with a systemwide educational program on ICM/PICM and how its implementation would contribute both to patients and their clinicians. During this education program, it became apparent that the system would also benefit from consideration of how BH services were structured at Patterson, especially since ICM/PICM managers would be accountable for total health and cost outcomes. As Case Management Center of Excellence services were being developed, another initiative at Patterson emerged to discover best practices in transitioning to a health system with integrated BH services located in medical settings.

Few clinicians at Patterson were aware of ICM/PICM, let alone core elements of value-based case management. Thus, concurrent with hiring and training qualified case managers in ICM/PICM assist and support services, Patterson Physician Network physicians and other practitioners contracting with Patterson Health System were expected to either participate in a series of webinars on case management, including ICM/PICM, or to attend a half-day educational seminar developed specifically for physicians. Both the webinars and the educational seminar were sponsored by Patterson Health System and presented patients in the various forms of case management assist and support services within the Patterson family. Both focused on the concrete activities of providers and case managers utilizing ICM/PICM, as well as the potential for improvements in health and economic outcomes associated with the programs. Andrea, the respected physician champion from the Patterson Physician Network, who was on the Center of Excellence team, engendered acceptance by physicians and other clinicians through her clear description of value garnered through physician-case manager collaboration.

It took about 6 months to formulate the ICM/PICM case manager job description, to identify the headquarters for administration of the ICM/PICM program, and to hire and train a complement of 35 clinicians and their supervisors in ICM/PICM principles and practices. By 9 months, the program was well underway. Trained ICM/PICM managers were assigned to specific regions surrounding Patterson's seven hospitals. All, however, worked with assigned patients regardless of where they sought services in the system, i.e., inpatient, outpatient, and post-acute care, at all Patterson and non-Patterson hospitals and clinics, and in other locations beyond the Patterson system.

Consistent with ICM/PICM recommendations, the Patterson Case Management Center of Excellence lobbied for and received permission to hire several part-time ICM/PICM Medical Directors who would serve as physician "resources" for the case managers working with the most difficult patients in Patterson's Health System. These included family physicians, internists, psychiatrists, PhD psychologists, and pediatricians. The Medical Directors' role was to oversee the clinical progress of patients in ICM/PICM, to support the ICM/PICM managers as they pursued "assist to target" ICM/PICM practices, and to participate in the review of patients nearing readiness for graduation from ICM/PICM.

These ICM/PICM Medical Directors reviewed each ICM/PICM manager's more challenging cases and those potentially ready for discharge on a biweekly basis. When needed, they brainstormed about potential next steps with ICM/PICM managers when patients were not achieving expected outcomes, and they were the conduits for discussing possible changes in the care plan with treating physicians. This was always tricky since the treating physicians, not the Medical Directors, decided on care. Due to the educational sessions for providers within the Patterson system, however, most clinicians recognized that discussion with Medical Directors in this context was a value add for their patients. They viewed Medical Directors essentially as another helpful set of eyes.

ICM/PICM Medical Directors were critical contributors to patient outcomes. While they were not involved in direct assessment and treatment decisions, they assured that the physicians working with this challenging group of patients were supported in using a "treat to target" approach and that the ICM/PICM managers complemented that activity using "assist to target" practices. Of course, the ICM/PICM adult and pediatric medical and BH physicians who served as Medical Directors required additional training in actual ICM/PICM practices and assistance techniques. Without their participation, however, even very talented ICM/PICM managers would have had limited impact since often third-, fourth-, and fifth-line interventions were necessary to achieve desired health improvement and cost reduction for this population with challenging health conditions.

From a financial standpoint, the pilot ICM/PICM program was intended to target Patterson Health System patients covered under population health contracts, such as the MSSP and, interestingly, employees covered by Patterson Health System. Despite attempts to target these populations, however, it became evident that Patterson patients covered through all contract arrangements, including fee for service, surfaced as candidates for ICM/PICM assistance. Referrals to the ICM/PICM program increased as clinicians caring for patients with health complexity became familiar with the program and learned how to effectively collaborate with ICM/PICM managers on behalf of their patients. Unfortunately, because the pilot program was small, it was limited in its ability to meet the demand from providers and patients. It would only be after program expansion, if finances allowed, that clinical availability would come closer to the identified need.

The Case Management Center of Excellence Contribution to Patient Care

Eighteen months after Patterson Health System initiated the Case Management Center of Excellence program, outcomes for the program were starting to accumulate. By this time, many changes had taken place. Admission and discharge authorization personnel continued to provide similar services as before the Center of Excellence, as did inpatient social support professionals, for the majority of admissions to each of Patterson's hospitals. The wellness program was also largely the same, though it now incorporated innovative technology and assumed a greater presence as promoters of preventive measures for patients with chronic illnesses.

Review of activities by ad hoc outpatient case management programs in various clinics suggested that redirecting resources from these programs to the ICM/PICM program would lead to greater value. The distinction of "outpatient case manager" soon became obsolete. Some of the nurses and social workers who previously carried these titles became members of the trained ICM/PICM staff. Patterson's original disease management programs continued but slowly adopted a number of ICM/PICM principles to increase the value they brought to patients, such as:

- Adoption of triage procedures to allow prioritized assistance only to patients with higher need
- Multi-domain complexity barrier identification
- Medical and BH care plan assistance procedures
- The use of the "assist to target" approach
- Predetermined outcome-based case closure practices

Changes in the disease management program allowed a reduction in total staff assigned and greater impact on health and cost outcomes for those continuing to participate.

Similar to the disease management program, the transitions of care program decreased in size to include only those with the greatest risk for adverse post-discharge outcomes. This was possible due in part to the improved inpatient to outpatient communication using standardized procedures incorporated into the updated EHR supported by Synda and Matthew. Isolated incidences of poor communication continued to occur, but they were much less frequent. In general, communication throughout the system was improved since BH specialists were now using Patterson's medical EHR as they became assimilated into the Patterson Physician Network and were integrated into medical settings.

It was with the ICM/PICM program that the greatest changes were occurring. Initially, physician support for the ICM/PICM program was limited since most physicians were unfamiliar with ICM/PCIM manager work processes and assistance services, despite the mandatory (Patterson Network physicians) or strongly recommended (non-Patterson contracted physicians) educational programs. Lack of physician understanding of the program necessarily lowered patient recruitment and engagement during the early days of deployment. The greatest recruitment occurred with Patterson Network physicians, and especially those taking care of patients covered under population-based global contracts.

Physicians in Patterson's public program PCMHs and those working as hospitalists in their county hospital experienced the most benefit early on, as they had been given individualized attention during the ICM/PICM educational process. Patterson Health System wanted to maximize value for these patients since they held the greatest potential for generating savings by reducing utilization. Indeed, by the end of the first 12 months, ICM/PICM managers were trained and their support program matured. The practitioners with patients in the program became familiar with breadth of pertinent information in the ICM/PICM-CAG, appreciated the assistance their patients were receiving as part of shared care plans, and realized improvements in health outcomes for their patient panels as issues for which they would not have had time were addressed through the assistance of the assigned ICM/PICM manager.

At first, physicians were neutral to ICM/PICM involvement, thinking that it would be another among many time sinks for them. Slowly, however, they watched an increasing number of their chronically ill patients with treatment-resistant conditions make headway. Not all patients improved since the population was one of the most challenging, but it became apparent that something new was happening with this subpopulation of patients. From those physicians who experienced improved outcomes on behalf of their patients, word of mouth led to an increase in referrals to the ICM/PICM program. Gradually, the number of physicians willing to endorse and use the program increased, including for those outside of the Patterson Physician Network.

By 18 months into the program, ICM/PICM manager caseloads were full and there was a waiting list. James, under the direction of Synda and Matthew, was in the process of completing a pre-post financial analysis on participants. Further, the outcomes recorded by ICM/PICM managers for individual patients using the care plan measurement tool (CPO) and the record of outcome measurement (PCIP) were being compiled in a single database to evaluate total program performance. Since Patterson Health System was associated with an academic medical center, a number of health service researchers were also interested in the pilot data and the potential for the program to mature into a researchable component of medical practice.

Comments

Of course the scenario described above is fictitious. There is no Patterson Health System, Synda, Matthew, Lana, or Allie. There are, however, insurance plans, health systems, ACOs, government agencies, and employers that are developing assistance and support programs, whether they go by the name case management, care coordination, or patient navigation. All stakeholders incorporating these programs are interested in capturing better patient health outcomes and reducing costs, but for most the work processes and reward systems utilized do not necessarily predict either outcome improvement or cost containment.

As an alternative, this scenario describes how physicians working with case management professionals might envision and construct programs that will improve health outcomes for a patient population. Importantly, physicians are not bystanders in the process. They are effective partners in the development of value-added case management programs whose success will necessarily depend on physicians' clinical and administrative contributions. Case management professionals will be the front-line managers and practitioners for assist and support services, but physicians will provide guidance particularly for patients with very complex and treatment-resistant conditions.

In this next era of payments and contracts for the provision of healthcare that is based on its value for populations and society, entities such as ACOs will need to extend their focus beyond medications and innovative therapies. Furthermore, implementing programs that benefit narrow portions of the population or meet specific payer incentive packages will not maximize potential return for the entire system. Instead, ACOs will need to systematically address social and health system-related barriers for the small percentage of their accountable population that utilizes the greatest proportion of healthcare services, many of whom have behavioral health conditions and suffer significant social disadvantage.

Case management is an evidence-based method for helping patients overcome these impediments to health improvement. ICM/PICM offers the additional benefit of including behavioral health, social factors, and health system factors, in addition to the traditional biomedical conditions, all in one package. It also focuses on relationships between managers, providers, and patients to encourage engagement with the health system and provides a systematic method for identifying major barriers to improvement, actions to overcome them, and measurement of health and economic outcomes. Thus ICM/PICM is a case management paradigm designed specifically for incorporation into ACOs to meet the demands of demonstrating improvement of the health of populations while also lowering costs. Ultimately, by aligning these goals of the health system with the needs and desires of patients, the Triple Aim may be realized and the unsustainable financial path of the current healthcare system will be rectified. At the end of the day, the most important reason for Patterson adopting ICM/PICM is that patients like Bob, Lokandra, Elina, Johnny, Yolanda, and Renaldo will be better served and have better outcomes. And that, to borrow the phrase, "is priceless."

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Appendix 1: Integrated Case Management (ICM) Algorithmic Triage Strategies

Note: Triggering processes are generally not necessary for low-intensity assistance and support programs since the populations are defined by the targeted assistance being given. For instance, discharge management, also called transitions of care, is automatically triggered by a discharge from an inpatient facility. Likewise, wellness programs are designed to assist every member of a given population, although some may target only those with unhealthy behaviors identified by a health risk assessment. In most low-intensity assist and support programs, triage is largely performed using non-time-consuming standardized workflows.

Medium-intensity assistance and support, also called case management, programs can have simple triggering processes, such as anyone found to have a coded diagnosis of a targeted illness, such as diabetes mellitus or congestive heart failure. Disease management programs commonly use this type of case triggering. Condition-specific code-based triggering can be efficiently performed through a patient registry or by servicing the needs only of patients in disease-specific clinical settings. Sometimes, however, there is a desire to provide support only for those with evidence of poor control or who are at risk for poor outcomes. In these situations, simple laboratory tests, such as HbA1c for patients with diabetes; level of illness documentation procedures, such as an FEV1 for patients with chronic obstructive lung disease; evidence of nonstandard illness improvement, such as disability guidelines for employees recovering from common non-work-related illnesses; etc. may be used to identify a discrete subset.

High-intensity programs, such as complex case management or integrated case management, are designed to deliver relationship-based, longitudinal case management across treatment platforms. They are time-consuming and costly, but these types of case management have the greatest potential to bring clinical and economic value. Thus, it is essential that a systematic triage process be developed. This will prevent complex case managers from inappropriately devoting time to patients with less potential for value-added outcomes.

Triggering mechanisms for patients in these programs can be more challenging and will vary depending on the target complexity of the case management program; the availability of tools to uncover management candidates; the number of anticipated managers available to manage a complex patient population; and the goals of the organization doing the management. Regardless of these issues, triggering processes are necessary and should uncover candidates for complex and integrated complex case management as precisely and efficiently as possible, so that the majority of case manager time is spent in management and not in triage. Triage is a necessary and potentially time-consuming procedure that has limited intrinsic value in terms of altering outcomes for patients/members.

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

For this reason, we provide a strategy for algorithmic triage designed to quickly uncover and prioritize patients/members for case management inclusion while minimizing the "person time" needed to identify high-risk case management candidates:

I. Algorithmic complex and integrated complex case management database triage system* identifying candidates for case management using claims data [a late identifier], care delivery system information systems, and/or clinical electronic health record data registries:

  A. Step 1: Create a weekly or biweekly database feed that prioritizes patients/members with all three of the following risk components:

    1. More than two chronic medical conditions, e.g., migraines, brain injury, diabetes, renal failure, and back pain, or more than one chronic BH condition including at least one serious BH illness, e.g., autism, schizophrenia, type I bipolar affective disorder, eating disorder, substance dependence, and unipolar depression
    2. Medical, BH, and pharmacy claims greater than \$3000 per month in the last 6 months or total annual healthcare costs of >\$30,000
    3. Concurrent *active* physical *and* BH conditions (includes insufficiently explained or non-resolving pain complaints)

  B. Step 2: For those with all three of Step 1 risk factors, prioritize for inclusion in complex case management based on the additional presence of two of the following (if an insufficient number of patients is uncovered for case management who have all three risk factors in Step 1, conduct Step 2 using those with two Step 1 risk factors):

    1. One hospitalization or more than three emergency room visits in the previous 3 months
    2. *Greater than* seven regularly taken discrete medications during the previous month
    3. *Greater than* five treating practitioners actively involved in the patient's care for the previous 2 months (can be unrelated conditions)

  C. Step 3: Prioritize those for enrollment with three risk factors identified in Step 1 and three in Step 2. Do not spend time trying to pick the "best" patient/member, just start enrolling those that can be contacted, indicate willingness to consider trying new health improvement measures, and agree to participate. If case management slots remain, then choose patients with three risk factors identified in Step 1 and two in Step 2 for participation, etc.

*Note: To make the number of identified patients appropriate for case management participation closer to the number of case manager slots available, algorithmic cut points, e.g., claims dollar amounts, number of ER visits, total number of physicians, etc., can be adjusted up or down based on experience with the number of patients identified from a given population. Algorithms need to be adjusted to special needs for children/adolescents. When case manager slots are not available, then lists should not be reviewed to identify new patients.

II. Direct clinician team inpatient or outpatient complex case management candidate identification:

   A. Step 1: Clinician team participates in a weekly or biweekly case review that prioritizes patients with all three of the following risk components:

      1. More than two chronic medical conditions, e.g., migraines, brain injury, diabetes, renal failure, and back pain, or more than one chronic BH condition including at least one serious BH illness, e.g., autism, schizophrenia, type I bipolar affective disorder, eating disorder, substance dependence, and unipolar depression
      2. More than three outpatient clinic visits or one emergency room visit per month for 3 months or 2 or more inpatient admissions in the previous 4 months
      3. Concurrent *active* physical *and* BH conditions (includes insufficiently explained or non-resolving pain complaints)

   B. Step 2: For those with all three of Step 1 risk factors, prioritize for inclusion in complex case management based on the additional presence of two of the following (if an insufficient number of patients is uncovered for case management who have all three risk factors in Step 1, conduct Step 2 using those with two Step 1 risk factors):

      1. Unresolved pain symptoms requiring escalating does of pain medications or chronic narcotic use
      2. *Greater than* seven regularly taken discrete medications during the previous month
      3. *Greater than* five treating practitioners actively involved in the patient's care for the last 2 months (can be unrelated conditions)

   C. Step 3: Prioritize those for enrollment with three risk factors identified in Step 1 and three in Step 2. Programs can elect to pick patients perceived a "challenging" by clinicians first; otherwise, do not spend time trying to choose the "best" patient/member, just enroll the first that can be contacted, indicates willingness to consider trying new health improvement measures, and agrees to participate. If case management slots remain, then choose patients with three risk factors identified in Step 1 and two in Step 2 for participation, etc.

*Note: To make the number of identified patients appropriate for case management participation closer to the number of case manager slots available, algorithmic cut points, e.g., claims dollar amounts, number of ER visits, total number of physicians, etc., can be adjusted up or down based on experience with the number of patients identified from a given population. Algorithms need to be adjusted to special needs for children/adolescents. When case manager slots are not available, then cases should not be reviewed.

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Appendix 2: Adult Integrated Case Management-Complexity Assessment Grid (ICM-CAG) Variables and Their Clinical Anchor Points

The Integrated Case Management-Complexity Assessment Grid (ICM-CAG) evaluates complexity in adults. It provides the ICM manager with a rapid yet comprehensive assessment of adults presenting for healthcare that can be used (1) to identify patient needs, (2) to initiate individual care plan development, and (3) to support stabilization and/or return patients to a higher level of health through case management activities. The ICM-CAG adopts a life-span perspective in the assessment of barriers to improvement within the concept of health complexity. The instrument was developed to uncover actionable circumstances related to historical/developmental antecedents, current life situation, and anticipated future vulnerabilities. *"Vulnerabilities" in the context of the ICM-CAG specifically relates to the risk of barrier persistence and/or worsening domain specific problems in the future if individualized care through ICM is withdrawn.*

Instructions for Scoring Items (Table A2.1)

1. Health complexity is defined as interference with the achievement of expected or desired health and cost outcomes due to the interaction of biological, psychological, social, and health system factors when patients are exposed to standard care delivered by their doctors. Health complexity requires a shift from standard care to individualized care (case management) in order for patients to overcome barriers to improvement. Each complexity item (also called a "cell") on the ICM-CAG is rated using four anchor points in a Likert-type scale. Each anchor point is designed to reflect a level of need, which in turn leads to specific actions to be taken by the ICM manager on behalf of the patient.

   Whenever a variable is rated, in addition to the clinical anchor points as defined below, one should keep the following question in mind: "Will the situation recorded for this complexity item interfere with health outcomes if standard medical care is given?" Another important consideration, particularly when there is debate between two anchor point levels for an individual item, e.g., scoring a "1" vs. a "2" or a "2" vs. a "3," is to consider the immediacy of need for action on behalf of the patient. The time frame for action can inform the final decision.

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

Table A2.1 Integrated Case Management-Complexity Assessment Grid (ICM-CAG)

ID number ______________ **Age** ____________ **Gender** ______

Date	**Health risks and health needs**					
Name	**Historical**		**Current state**		**Vulnerability**	
Total score=	Complexity item	Score	Complexity item	Score	Complexity item	Score
Biological Domain	Chronicity (HB1)		Symptom severity/impairment (CB1)		Complications and life threat (VB)	
	Diagnostic dilemma (HB2)		Diagnostic/therapeutic challenge (CB2)			
Psychological Domain	Coping with stress (HP1)		Treatment adherence (CP1)		Mental health threat (VP)	
	Mental health history (HP2)		Mental health symptoms (CP2)			
Social Domain	Job and leisure (HS1)		Residential stability (CS1)		Social vulnerability (VS)	
	Relationships (HS2)		Social support (CS2)			
Health System Domain	Access to care (HHS1)		Getting needed services (CHS1)		Health system impediments (VHS)	
	Treatment experience (HHS2)		Coordination of care (CHS2)			
Comments	(Enter pertinent information about the reason for the score of each complexity item here, e.g., poor patient adherence, death in family with stress to patient, non-evidence-based treatment of migraine, etc.)					

2. All "historical" variables refer to the last 5 years. The two exceptions are the cells labeled "Mental health history" and "Access to care." Mental health history (HP2) relates to the patient's entire life and Access to care (HHS1) relates to the preceding 6 months.
3. All "current" variables refer to the 30-day period prior to the date that the ICM-CAG assessment is completed.
4. All "vulnerability" variables refer to the 3- to 6-month period after the date that the ICM-CAG assessment is completed, based on the difference from an estimate of the natural history of the patient's health state when given standard medical care.
5. Actions corresponding to anchor point scores are as follows: "0," no action; "1," need for monitoring and/or prevention; "2," need for intervention plan and action *soon*; and "3," need for *immediate* intervention plan and action.
6. Several cells in the complexity grid contain more than one content component that could be creating barriers to improvement, e.g., symptom severity *or* impairment in CB1, diagnostic *or* therapeutic challenge in CB2, etc. When scoring each item, the content component with the greatest potential for creating a barrier to improvement should direct the score, rather than the "average" of the item components. For instance, for Coordination of care (CHS2), if there were excellent communication between a family physician and a patient's surgeon but no attempt by the family physician to find and/or communicate with a needed mental health specialist for the same patient, the anchor point score would be "3."

Biological Domain

Items in the biological domain address how factors associated with physical conditions and their symptoms create barriers to a patient's optimal health.

In all situations except anchor point "3" for Diagnostic/therapeutic challenge (CB2), these items refer specifically to physical health issues. For CB2, anchor point "3" includes the potential for nonphysical factors, such as a mental health contributor to physical symptoms, need for cross-disciplinary mental health treatment to effect physical health improvement, aversion to Western medicine treatment techniques based on ethnic or cultural factors, etc. to contribute to complexity. This is a common source of anchor point scoring confusion. Unless these nonphysical health issues are effectively addressed, improvement in the biological domain cannot be expected (Table A2.2).

Table A2.2 Biological domain

HB1	**Chronicity**
0	Less than 3 months of physical symptoms/dysfunction; acute health condition
1	More than 3 months of physical symptoms/dysfunction or several periods of less than 3 months
2	A chronic disease
3	Several chronic diseases
HB2	**Diagnostic dilemma**
0	No period of diagnostic complexity
1	Diagnosis was clarified quickly
2	Diagnostic dilemma solved but only with considerable diagnostic effort
3	Diagnostic dilemma not solved despite considerable diagnostic effort
CB1	**Symptom severity/impairment**
0	No physical symptoms or symptoms resolve without treatment
1	Mild symptoms and/or interference with current functioning
2	Moderate symptoms and/or impaired current functioning
3	Severe symptoms and/or inability to perform many functional activities
CB2	**Diagnostic/therapeutic challenge**
0	Clear diagnoses and/or uncomplicated treatments
1	Clear differential diagnoses and/or diagnoses expected with clear treatments
2	Difficult to diagnose and/or treat; physical cause/origin and treatment expected
3	Difficult to diagnose and/or treat; other issues than physical causes interfering with diagnostic and therapeutic process
VB	**Complications and life threat**
0	Little or no risk of premature physical complications or limitations in activities of daily living
1	Mild risk of premature physical complications or limitations in activities of daily living
2	Moderate risk of premature physical complications or permanent and/or substantial limitations of activities in daily living
3	Severe risk of physical complications and/or serious permanent functional deficits and/or dying

Psychological Domain

Items in the psychological domain address how factors associated with health behaviors, coping styles, and behavioral health conditions, *which includes mental health and substance use disorders*, create barriers to a patient's optimal health (Table A2.3).

Social Domain

Items in the social domain address how relationships; social connectedness and support; living arrangements; and function in a community, in the job setting, and with coworkers create barriers to a patient's optimal health (Table A2.4).

Table A2.3 Psychological domain

HP1	**Coping with stress**
0	Ability to manage stresses/life and health circumstances, such as through support seeking or hobbies
1	Restricted coping/problem solving skills, such as a need for control, illness denial, or irritability
2	Impaired coping/problem solving skills, such as nonproductive complaining or substance *abuse* but without serious impact on medical condition, mental health, or social situation
3	Minimal coping/problem solving skills, manifest by destructive behaviors, such as substance *dependence*, psychiatric illness, self-mutilation, or attempted suicide
HP2	**Behavioral health history**
0	No history of behavioral health problems or conditions
1	Behavioral health problems or conditions, but resolved or without clear effects on daily function
2	Behavioral health conditions with clear effects on daily function, needing therapy, medication, day treatment, partial program, and so forth
3	Psychiatric admission and/or persistent effects on daily function
CP1	**Treatment adherence**
0	Interested in receiving treatment and willing to cooperate actively
1	Some ambivalence though willing to cooperate with treatment
2	Considerable resistance with non-adherence; hostility or indifference toward healthcare professionals and/or treatments
3	Active resistance to important medical care
CP2	**Mental health symptoms**
0	No mental health symptoms
1	Mild mental health symptoms, such as problems with concentration or feeling tense, which do not interfere with current functioning
2	Moderate mental health symptoms, such as anxiety, depression, or mild cognitive impairment, which interfere with current functioning
3	Severe psychiatric symptoms and/or behavioral disturbances, such as violence, self-inflicted harm, delirium, criminal behavior, psychosis, or mania
VP	**Behavioral health threat**
0	No mental health concerns
1	Mild risk of worsening due to poor coping or mental health *symptoms*, such as anxiety, feeling blue, substance abuse, or cognitive disturbance with limited impact on function; mild risk of treatment resistance (ambivalence)
2	Moderate risk of impaired coping or behavioral health *disorder* requiring additional mental healthcare; moderate risk of treatment resistance
3	Severe risk of problems due to poor coping or psychiatric disorder requiring frequent emergency room visits and/or hospital admissions; risk of treatment refusal for serious disorder

Health System Domain

Items in the health system domain address how access, availability, and coordination of care, as well as the patient's experiences with their providers, create barriers to the patient's optimal health.

Table A2.4 Social domain

HS1	**Job and leisure**
0	A job (including housekeeping, retirement, studying) and having leisure activities
1	A job (including housekeeping, retirement, studying) without leisure activities
2	Unemployed now and for at least 6 months with leisure activities
3	Unemployed now and for at least 6 months without leisure activities
HS2	**Relationships**
0	No social disruption
1	Mild social dysfunction; interpersonal problems
2	Moderate social dysfunction, such as inability to initiate or maintain social relations
3	Severe social dysfunction, such as involvement in disruptive social relations or social isolation
CS1	**Residential stability**
0	Stable housing; fully capable of independent living
1	Stable housing with support of others, e.g., family, home care, or an institutional setting
2	Unstable housing, e.g., no support at home or living in a shelter; change of current living situation is required
3	No current satisfactory housing, e.g., transient housing or dangerous environment; immediate change is necessary
CS2	**Social support**
0	Assistance readily available from family, friends, and/or acquaintances, such as work colleagues, at all times
1	Assistance generally available from family, friends, and/or acquaintances, such as work colleagues, but possible delays
2	Limited assistance available from family, friends, and/or acquaintances, such as work colleagues
3	No assistance readily available from family, friends, and/or acquaintances, such as work colleagues, at any time
VS	**Social vulnerability**
0	No risk of need for changes in the living situation; social relationships and support or employment
1	Mild risk of need for changes in the living situation, e.g., home healthcare, social relationships and support, or employment
2	Risk of need for social augmentation/support, financial/employment assistance, or living situation change in the foreseeable future
3	Risk of need for social augmentation/support, financial/employment assistance, or living situation change now

Some find the distinction between Access to care (HHS1) and Getting needed services (CHS1) confusing (Table A2.5). HHS1 is intended to assess whether services have been available to patients for their health problems during the last 6 months. For instance, even if patients live in a clinician-rich community, they may still have had little access if they have no insurance or speak a foreign language when there are no interpreters. Access to care limitations under HHS1 is not restricted to practitioners. For instance, if patients are underinsured, medications, medical devices, and ancillary treatments, such as physical therapy, may become

Table A2.5 Health system domain

HHS1	**Access to care**
0	Adequate access to care
1	Some limitations in access to care due to financial/insurance problems, geographic reasons, family issues, language, or cultural barriers
2	Difficulties in accessing care due to financial/insurance problems, geographic reasons, family issues, language, or cultural barriers
3	No adequate access to care due to financial/insurance problems, geographic reasons, family issues, language, or cultural barriers
HHS2	**Treatment experience**
0	No problems with healthcare professionals
1	Negative experience with healthcare professionals (patient or relatives)
2	Dissatisfaction or distrust of doctors; multiple providers for the same health problem; trouble keeping consistent and/or preferred provider(s)
3	Repeated major conflicts with or distrust of doctors, frequent emergency room visits or involuntary psychiatric admissions, forced to stay with undesirable provider due to cost, provider network options, or other reasons
CHS1	**Getting needed services**
0	Easily available treating practitioners and healthcare settings (general medical or mental healthcare); money for medications and medical equipment
1	Some difficulties in getting to appointments or needed services
2	Routine difficulties in coordinating and/or getting to appointments or needed services
3	Inability to coordinate and/or get to appointments or needed services
CHS2	**Coordination of care**
0	Complete practitioner communication with good coordination of care
1	Limited practitioner communication and coordination of care; primary care physician coordinates medical and behavioral health services
2	Poor communication and coordination of care among practitioners; no routine primary care physician
3	No communication and coordination of care among practitioners; primary emergency room use to meet non-emergent health needs
VHS	**Health system impediments**
0	No risk of impediments to coordinated physical and behavioral healthcare
1	Mild risk of impediments to care, e.g., insurance restrictions, distant service access, limited provider communication, and/or care coordination
2	Moderate risk of impediments to care, e.g., potential insurance loss, inconsistent practitioners, communication barriers, poor care coordination
3	Severe risk of impediments to care, e.g., little or no insurance, resistance to communication, and/or disruptive work processes that lead to poor coordination

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out-of-pocket expenses that often are beyond the patient's ability to pay. Thus, they are essentially inaccessible. CHS1, on the other hand, assesses the current facility with which the patient can attend appointments with one or more practitioners and access needed health services through referral, as well as other service delivery level challenges in getting needed services. For instance, if a patient has limited transportation capabilities and/or no phone, it may become logistically impossible to attend appointments or to call in medication refills.

Lack of Coordination of care (CHS2) is a major contributor to persistent health complexity. In order for coordination among clinicians to occur, it is necessary for those involved in a patient's treatment to know who else is giving care and for what. While this is most often thought of in terms of direct written and/or verbal communication among practitioners, it also, and importantly, includes access by all providers to a patient's health records that document assessments and treatment. This is particularly important in patients who have both physical and behavioral health contributors to complexity since general medical and behavioral health record systems are often disconnected. Record sharing is also a problem when patients transition from outpatient to inpatient care and vice versa. If noncommunicating health record systems contribute to a lack of awareness by any of the practitioners about contributing health problems and/or treatments, then this would influence higher anchor point scores for CHS2.

Appendix 3: Scripted Dialogue for Adults

Question 1

Content Area: General Life Situation

"Is it okay to ask some questions to get to know you better before we focus on your current health situation?"

If okay, "Can you tell me a little about yourself, such as where you live, who you live with, how you spend your days, and what your hobbies and interests are?"

If not okay, use motivational interviewing skills to attempt to find out why and help the person see the value to them through participation.

Follow-Up Questions

(The case manager can fill these in later if there is reticence to divulge personal information at this point):

1.1. "What kind of job do you have?"
1.2. "Can you tell me about your financial situation/pressures?"
1.3. "Do you require assistance in getting out of the house?"
1.4. "Who helps you when a crisis arises?"
1.5. "Who are your friends?"
1.6. "How do you spend your free time?"
1.7. "Do you help take care of others, for example, family, a friend?"

Question 2

Content Area: Physical Health

"How is your *(name main medical illness)* affecting you today?"

Follow-Up Questions

2.1. "Have you had (other) physical problems or long-term conditions or illnesses?"
2.2. "Were these difficult to diagnose?"
2.3. "Are medical assessments underway?"
2.4. "*Are you on any medications and do you have trouble getting those medications?*"
2.5. "What other kind of treatments have you received?"

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

2.6. "How have the treatments worked?"
2.7. "Have you had difficulty following through on recommended physical health treatments?"
2.8. "Do physical symptoms interfere with doing the things you like to do?"

Question 3

Content Area: Emotional Health

"How do you feel emotionally, such as being worried, tense, sad, or forgetful?"

Follow-Up Questions

3.1. "Has your physical health situation affected your emotions (or your memory)?"
3.2. "Have you had emotional or behavioral problems in the past?"
3.3. "Have mental health issues required treatment or hospitalization, such as for depression, anxiety, confusion, substance use, or memory problems?"
3.4. "What kinds of treatments have you received and from whom?"
3.5. "Have you had difficulty in following through with your mental health treatments?"
3.6. "What kind of treatment are you receiving now?"
3.7. "Has treatment been helpful?"
3.8. "Do emotional factors interfere with doing the things you like to do?"

Question 4

Content Area: Interaction with Treating Practitioners

"Can you tell me who you see for your health problems?"

Follow-Up Questions

4.1. "Primary care physician/nurse practitioner?"
4.2. "Medical specialists?"
4.3. "Mental health or substance use disorder providers, such as psychiatrists, psychologists, social workers, nurses, counselors, etc.?"
4.4. "Other providers, such as chiropractors, naturopath, church counselor, etc.?"
4.5. "Can you tell me how you get along with your doctors?"
4.6. "How do those giving you care communicate with each other and coordinate your treatment?"
4.7. "How do your providers share their notes about your conditions and treatments (medical and behavioral; inpatient and outpatient)?"

4.8. "Do you have difficulty talking with them?"
4.9. "Are their offices near each other and easy to get to?"
4.10. "Have you had conflicts or disagreements with any of your doctors/providers, your hospital/clinic, or your insurance company that have led to bad feelings or mistrust?"

Question 5

Content Area: Health System Issues

"Can you tell me whether you have difficulty in getting the healthcare you need?"

Follow-Up Questions

5.1. "What type of medical insurance do you have and does it cover the services you need?"
5.2. "Tell me about restrictions you have in finding needed doctors for your health conditions (specialists, primary care, behavioral health)?"
5.3. "How far apart are the clinics you go to for your medical, mental health, or substance use disorder treatment?"
5.4. "Tell me how you pay for your (1) medical, (2) mental health, and (3) substance use disorder care?"
5.5. "How far do you live from the medical and behavioral health clinics and practitioners you need to improve (control) your health?"
5.6. "How do you assure a translator or someone from your culture can assist with health needs?"
5.7. "How much do you pay out of pocket for medications, needed tests, co-pays for appointments and hospital costs, needed medical equipment/devices, etc.?"
5.8. "What kind of transportation do you use to get to your appointments?"
5.9. "How long do you have to wait to get an appointment for each kind of care you need?"

Question 6

Content Area: More "Sensitive" Personal Information

"What kind of person are you, such as outgoing, suspicious, tense, or optimistic?"

Follow-Up Questions

6.1. "Do you smoke, use tobacco products, or e-cigarettes?"
6.2. "On average, how many alcoholic beverages do you drink a day (week), such as glasses of wine, beers, etc.?"

6.3. "Do you use painkillers: how often, how long, more often than prescribed?"
6.4. "Do you use cocaine, marijuana, or other recreational drugs?"
6.5. "Have you ever been treated for substance abuse problems?"
6.6. "How do you handle difficult situations?"
    (Alcohol or drug use; become talkative or silent; or procrastinate?)
6.7. "What are your biggest health concerns at this time?"

Question 7

Content Area: Additional Information from Patient

"What things did I not ask about that you think are important?"

Patient Goals

Content Area: Establishing Patient Goals

"During the next 1–3 months, what about your health? Would you like to have under better control (*clinical*), such as have less foot pain, have no asthma attacks for a solid month, etc.?"

"What would you like to be able to do that you can't do now (*functional*), such as attend church regularly, participate in family events, return to work, etc.?"

Content Area: Establishing Patient's Satisfaction with Healthcare

"During the last several months, how satisfied are you with the healthcare you have received?" (usually documented on a visual analogue scale from 1 to 10)

Content Area: Establishing Patient's Current Quality of Life

"During the last week, how many days did you feel well?" (documented by indicating the number of days out of seven that the patient was healthy)

Appendix 4: Elina's ICM-CAG Assessment Story

Elina is a 34-year-old female with a long history of multiple medical problems. She came to the attention of the case management program because one of her new specialist physicians was requesting health plan approval for an exploratory laparotomy in an attempt to identify the cause of the Elina's long-standing abdominal pain. During the past 5 years, she had received three upper and lower endoscopies and undergone five abdominal computed tomographies and three magnetic resonance studies, two gallbladder radionuclide (HIDA) scans, and four pelvic ultrasounds. The most recent procedure had been an abdominal angiogram, which revealed no identifiable pathology but was associated with an inguinal bleed that required a 3-week hospitalization to stabilize. She had been tried on numerous medication trials, often with initial but unsustained success. Abdominal exploration had been tried unsuccessfully 7 years previously but Elina's doctors had no other suggestions. Their only alternative was to continue narcotic analgesics at relatively high doses with no real objective reason.

(Elina's health plan utilization management Medical Director, who had been contacted to approve Elina's additional surgery, directly transferred Elina to an ICM manager. There was a small window of opportunity to review Elina's claims records prior to talking with the member. It revealed the information above. Average claims costs over the last 5 years were approximately $15,000 per member per month (PMPM), $176,000 per year. Information was gathered over two interviews with a total time of 1 h 30 min. There were lots of anecdotes. Elina likes to talk.)

Question 1

"Can you tell me about yourself, e.g., where you live, who you live with, how you spend your days, and what your hobbies and interests are?" (general life situation)

Notes

- Mother of three children (James 14, Ruth 10, Ruby 2)
- Housewife; worked part time as a salesperson for local manufacturer
- Lives with husband and children
- Family income in high six figures; owns home
- Active in parent-teacher organization (PTO)
- Volunteers at food bank
- Golfs, gardens, reads
- Trouble balancing work and family (wishes she didn't have to work)

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

- Frequent disability days at work due to weakness and fatigue prior to long-term disability (9 months) which is being contested by social security disability (worried, bad vibes)
- Husband supportive but has own life/interests
- "Great" sex life
- Parents live 50 miles away
- No obligations outside of family

Question 2

"Tell me how your health problems have been affecting your life?" (physical health)

Notes

- Stomach problems since age 18, always sick.
- Chronic problems—hypertension and obesity (fibroids, accessory spleen).
- Symptoms—abdominal pain, but also bloating, heartburn, flatulence, food intolerances, alternating diarrhea and constipation, and bleeding per rectum.
- Many procedures, surgeries, and treatments (see last 5 years in summary) with short-term improvement but nothing lasts.
- Hospitalized at least three times a year for the past 5 years for primary symptoms or complications from evaluations or treatment.
- Also regularly seen for muscle aches, fatigue, weakness, dizziness, menstrual irregularities, joint pain, painful urination, cough, and visual blurring.
- Several ER visits when unresponsive to her surroundings after a "fit."
- Doctors are puzzled by symptoms, can't find reasons, and resist doing tests and giving treatments.
- Many regular drugs: daily pregabalin (Lyrica—fibromyalgia), divalproex (Depakote—"spells" and headaches), hydrocodone/acetaminophen (Vicodin ES—abdominal pain, headaches, muscle and joint pain), orphenadrine (Norflex—muscle pain, leg cramps), famotidine (Pepcid AC Maximum Strength—heartburn), hyoscyamine (Levbid—GI spasm), oxybutynin (Ditropan—incontinence), and nafarelin (Synarel—endometriosis); at least 25 pill bottles in home medicine cabinets, which either didn't work or are used occasionally.
- Health problems affect work and attending her kids' school activities.
- Husband tired of health complaints, no longer listens but just says "get it fixed."

Questions 3

"Have your health problems affected your emotions, caused you to become discouraged or sad?" (emotional health)

Notes

- Psychiatric assessment encouraged by doctors many times (never followed through).
- No diagnosed mental conditions or treatment.
- PCP prescriptions for antianxiety or antidepressant medications either not filled or meds taken for only a short time.
- Sees a counselor (pastor without mental health training) regularly (by her account) for emotional needs.
- Elina doesn't describe personal emotional problems or connect medical problems to emotional factors.
- Sexually abused as teenager.
- Mother has many health problems also.
- Pastor commiserates with Elina about poor medical care in a dysfunctional health system.

Question 4

"Can you tell me which doctor coordinates care for your health problems?" (interaction with treating practitioners)

Notes

- Trouble finding a primary doctor to support disability and prescribe medications.
- Doesn't trust doctors; feels they are inconsistent and self-serving.
- She feels that doctors don't like her.
- Uses herbal (natural) remedies; told she has multiple allergies.
- Also uses chiropractic manipulation and acupuncture for pain problems.
- Always gets referred to specialists but health problems never solved.
- Doctors don't talk with each other.
- Prefers to prevent doctors from seeing what other doctors are doing, e.g., sharing emergency room and clinic notes, testing results, and treatment records.

Question 5

"Do you have trouble getting the healthcare you need?" (health system issues)

Notes

- Good company high deductible medical and mental health insurance (husband's); chemical dependency coverage offered only through separate insurer (family opted out).
- High deductible met by March the last 4 years.

- Well known by the medical community in her suburb; most physicians and many nurse practitioners had, at one time or another, come into contact with her.
- No primary care physician; "fired" her last PCP nearly 6 months ago; trouble finding another.
- Using various emergency rooms throughout her city for primary health needs.
- Referred to many specialists, now further and further from local community.
- No doctor or clinic to fill out her disability papers or prescriptions for pain and other medications.
- Orders medications from a mail order company in another country.

Question 6

"What kind of person are you, e.g., outgoing, suspicious, tense, or optimistic?" (sensitive "personal" issues)

Notes

- Good and caring person
- Many friends from her charity work
- Historical offers to move to other companies professionally—health insurance concerns prevented (no offers recently)
- Social drinking and no street drugs
- Takes pain medications in excess of prescribed amounts; uses multiple ERs to get more

Question 7

"What things did I not ask about that you think are important?" (additional information)

Notes

- Husband threatened divorce 6 months ago (nothing recent; marriage appears stable)

Elina's Goals

Can you tell me something specific you would like to improve related to your health in the next several months? How about things that you would like to be able to do that you cannot do now?

The case manager documents the areas of greatest health concern to Elina by establishing the goals that she would most like to achieve while working with the case manager. The case manager helps Elina through the decision-making process. She chooses the following two goals:

- **Clinical health**—to better control her stomach pain: baseline 9/10 on pain analogue scale
- **Functional**—not so much time used seeing doctors: baseline 10 out of the house visits to outpatient doctors or emergency rooms per month

Elina's baseline satisfaction with healthcare—1/10 on a visual analogue scale
Elina's quality of life—2 of 7 days per week feeling well

Appendix 5: Scripted Dialogue for Children/Youth and Parents/Caregivers

Whenever possible, children/youth should be actively engaged in the information-gathering process. For children too young to answer for themselves, all information related to the initial assessment is obtained solely from the members of the family unit. For youth able to provide information on their own, they should be involved in the assessment process to the extent possible and may even meet independently with the case manager to provide information. The decision to involve children/youth in the information-gathering session depends on their developmental maturity. Even very young children can provide valuable information about their physical and emotional well-being, and it may be helpful for case managers to evaluate the quality of interactions between the caregiver and child. It may be particularly important to speak directly with adolescents as they are gaining independence in managing their healthcare issues. Understanding adolescents' goals and motivation may support their engagement in the process and activities required to achieve health.

In general, this means that there will be a combined interview with the child/youth and the caregiver/parent(s) and an independent interview with each the child/youth and the parent(s). Each section below begins with a question in the header section. All questions in the header section should be asked during the joint and/or independent interviews. Depending on the answers to these initial questions, the follow-up questions listed below the header in each section should be asked. Questions involving sensitive content may be saved for the independent interview sessions, with appropriate assurances of confidentiality expressed, particularly for adolescents.

Questions asked to the parent only are in **bold**. Questions asked during the combined and/or independent interviews at the discretion of the case manager are underlined. When possible, it is helpful to confirm conflicting and/or uncertain findings with information from other sources, including medical records, health practitioners, teachers, peers, clergy, etc. Notes will be consolidated and anchor points scored in the PICM-CAG assessment instrument based on the best evidence from the information sources.

Question 1

"Is it okay to ask some questions to get to know you (parent and/or youth) better before we focus on your current health situation?" If okay, "Can you tell me a little about your situation (parent and/or youth), e.g., where you live, who your friends are, what you like to do (hobbies/interests, extracurricular activities), and with whom you like to do things?"

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Follow-up questions (The case manager can fill these in later if there is reticence to divulge personal information at this point.):

1.1. “Can you tell me about the members of your family?”
1.2. “Who are your close friends or relatives?”
1.3. “Whom do you rely (youth) on when you need help?”
1.4. “Can you tell me about how you like your school?”
1.5. “How do you do in school?”
1.6. “What things do you like to do outside of classes, e.g., clubs, sports, music, etc.?”
1.7. “Have you had difficulty with attendance or getting along at school?”
1.8. “Have you gotten in trouble in school, at home, or with the law?”
1.9. “How do you spend your free time?”
1.10. “**Can you tell me about your spouse/partner?**”
1.11. “**Are there custody issues related to the child/youth?**”
1.12. “**Where does the youth live?**”
1.13. “**Have you moved often?**”
1.14. “**Who supervises and feeds your youth during non-school hours?**”
1.15. “**What kind of job do you have?**”
1.16. “**Can you tell me about your financial situation/pressures?**”
1.17. “**Can you tell me about current stresses/changes in your family situation or things that are worrying you about the future?**”
1.18. “**Can you tell me about any physical or mental conditions or disability that you or your spouse/partner have?**”
1.19. “**Who helps you (parents) when a crisis arises?**”
1.20. “**How does your child’s health situation impact on your family?**”
1.21. “**Do you help take care of others, i.e., family, a friend?**”
1.22. “**Can you tell me about behaviors, friendships, school, or legal concerns related to your youth?**”

Question 2

“How do you/does your youth feel physically?”

Follow-Up Questions

2.1. “Have you had (other) problems with your health for a long time?”
2.2. “Are the doctors doing tests on you now?”
2.3. “What kind of treatment are you getting?”
2.4. “Have you had difficulty doing what the doctors ask you to do?”
2.5. “Have the doctor’s treatments worked?”
2.6. “Do health problems keep you from doing the things you like to do?”
2.7. “**How serious are your youth’s health problems?**”
2.8. “**Is your youth disabled or impaired?**”
2.9. “**Were your youth’s health problems difficult to diagnose?**”

Question 3

“How do you feel emotionally, e.g., worried, tense, sad, or forgetful?”

Follow-Up Questions

3.1. “Do you get in trouble very often?”
3.2. “Have you ever seen a doctor or counselor because you got in trouble or because you felt so upset?”
3.3. “Have you gotten treatment for this or gone into the hospital?”
3.4. “Do you have trouble doing what your doctors ask you to do?”
3.5. “Has the treatment been helpful?”
3.6. “Do emotional factors or things that get you into trouble affect how you get along with others?”
3.7. “Do emotional factors or things that get you into trouble interfere with your ability to do the things you like to do?”
3.8. “**Can you describe if there were challenges in your youth’s development?**”
3.9. “**Can you describe if special services or school assistance was needed due to your youth’s cognitive development?**”
3.10. “**Has your youth had mental health problems, e.g., depression, eating disorder, severe anxiety?**”
3.11. “**Has your youth been treated for mental health or cognitive problems?**”
3.12. “**Can you describe if your youth experienced early life events that might have affected his/her health, e.g., head trauma, lead exposure, prenatal alcohol or drug exposure, abuse, in utero infections?**”

Question 4

“Can you tell me who you see for health problems?”

Follow-Up Questions

4.1. “Are your doctors (counselors) easy to talk to?”
4.2. “Do you trust your doctor (counselor)?”
4.3. “Have any of them done something that you don’t like or disagree with?”
4.4. “**Pediatrician/nurse practitioner?**”
4.5. “**Medical specialists?**”
4.6. “**Mental health providers, e.g., psychiatrists, psychologists, social workers, nurses, etc.?**”
4.7. “**Other providers, e.g., chiropractors, naturopath, church counselor, etc.?**”

4.8. **“Community/state service agency providers such as child protective services or services associated with juvenile justice?”**
4.9. **“State agencies such as the Department of Mental Health or the Department of Disabilities?”**
4.10. **“How do those giving your youth care talk with each other and coordinate his/her treatment?”**
4.11. **“Do you have difficulty communicating with them?”**
4.12. **“Are their offices near each other and easy to get to?”**
4.13. **“Have you (parent) had conflicts or disagreements with your youth’s doctors/providers, your hospital/clinic, or your insurance company that have led to bad feelings or mistrust?”**

Question 5

“Can you tell me whether you have difficulty in getting the healthcare you need?”

Follow-Up Questions

5.1. **“What type of medical insurance do you have for your youth and does it cover the services needed?”**
5.2. **“Does your child/youth qualify for or already have access to available assistance from state disability services and/or the state Department of Mental Health?”**
5.3. **“How do you find medical doctors who will accept your youth as a patient?”**
5.4. **“Do you need to go to separate clinics for mental health treatment?”**
5.5. **“Are there separate payment rules for mental healthcare?”**
5.6. **“Have you or your primary care physician had difficulty in finding a mental health provider for your youth?”**
5.7. **“How far do you live from the medical clinics and doctors you need to improve (control) your youth’s health?”**
5.8. **“Is transportation a problem in getting to your youth to appointments?”**
5.9. **“Do you need a translator or someone from your youth’s culture to assist with health needs?”**
5.10. **“Can you afford your youth’s medical care, i.e., medications, needed tests, co-pays for appointments and hospital costs, needed medical equipment/devices, etc.?”**
5.11. **“Are there long waiting lists for the kind of care your youth needs?”**
5.12. **“Have you had difficulty in transitioning your youth’s care from his/her pediatric practitioners to adult doctors?”**

Question 6

"What kind of person are you (is your youth), e.g., outgoing, suspicious, tense, optimistic?"

Follow-Up Questions

6.1. "How do you handle difficult situations?" (talkative, silent, procrastinate?)
6.2. "What are your biggest health concerns at this time?"
6.3. "If I worked with you for the next several months, what would you most like me to help you make better about your health e.g., no shots, stop being sick from meds, etc.?"
6.4. "What would you most like to be able to do that you can't do now (functional), e.g., play in the band, stay overnight with friends, or lose weight?"
6.5. "Do you (think your youth) smoke?"
6.6. "Do you (think your youth) use alcohol?"
6.7. "Do other family members have alcohol or drug problems?"
6.8. "Do you (suspect that your youth) or your (his/her) friends use drugs?"
6.9. "Have you (your youth) ever been treated for substance abuse problems?"
6.10. "**What kind of person are you (parent), e.g., outgoing, suspicious, tense, optimistic?**"
6.11. **"How do you (parent) handle difficult situations?"**

Question 7

"What things did I not ask about that you think are important?"

Questions About Goals

Content Area: Personal Goals

Personal clinical goal (youth): "Can you tell me something specific you would like to improve related to your health in the next several months?"
Personal functional goal (youth): "How about things that you would like to be able to do that you cannot do now?"
Personal clinical goal (parent): "Can you tell me something specific you would like to improve related to your health in the next several months?"
Personal functional goal (parent): "How about things that you would like to be able to do that you cannot do now?"
Quality of life: metric
Satisfaction with care: metric

Appendix 6: Care Plan Development Sheet (CP)

Name and case #:______________________________
Date:____

Barriers CAG items	**Goals**		**Actions**
	Short term		
	Long term		
	Short term		
	Long term		
	Short term		
	Long term		
	Short term		
	Long term		
	Short term		
	Long term		

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Appendix 7: Care Plan Outcomes Template: Goals, Actions, and Outcomes (CPOs)

Name and case #:______________________________

Date:_______________________________________

CAG items	**Goal**	**Action**	**Outcome**
Barrier *Item(s)* __			
Barrier *Item(s)* __			
Barrier *Item(s)* __			
Barrier *Item(s)* __			
Barrier *Item(s)* __			
Barrier *Item(s)* __			
Barrier *Item(s)* __			

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Appendix 8: Pediatric Patient-Centered ICM Performance Template (PCIP)

Name and case #:______________________

Date:________________________________

Measure	Baseline	Follow-up assessments		
Time period	*Initial (date)*	*First (date)*	*Second (date)*	*Third (date)*
Clinical measure Related to child/youth goal				
Clinical measure Related to caregiver goal				
Functional measure Related to child/youth goal				
Functional measure Related to caregiver goal				
Health-related quality of life				
Family satisfaction				
PICM-CAG score				
Clinical measure Health professional goal				
Functional measure Health professional goal				
Economic measure Health professional goal				

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Appendix 9: Pediatric ICM-CAG Variables and Anchors

Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG) Variables and Their Clinical Anchor Points

The Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG) assesses complexity in children and adolescents. It provides the case manager with a rapid, yet comprehensive assessment of children/youth presenting for healthcare that can be used to (1) identify patient and family needs, (2) initiate individual care plan development, and (3) support stabilization and/or return of the child/youth to health through case management activities. The PICM-CAG adopts a life-span perspective in the assessment of barriers to improvement within the concept of health complexity. The instrument was developed to uncover actionable circumstances related to historical and developmental antecedents, the child/youth's current life situation, and anticipated future vulnerabilities. *"Vulnerabilities" in the context of the PICM-CAG specifically relate to the risk of barrier persistence and/or worsening in the future if individualized care through case management is withdrawn.*

Children and adolescents with health complexity require a complementary yet augmented assessment, which includes a focus on the family unit, peer relationships, school situation, community involvement, and others covered in the scripted interview. In the case of children, for whom the specialized PICM-CAG has been developed, case management activities are as likely to be directed toward assistance to parents/caregivers, hereafter called the family unit, as to the child/youth since barrier reversal may only be possible when family unit problems are addressed.

In some situations, family units may present with personal health-related complexity affecting the child/youth's complexity such that referral to social services or an adult ICM program, independent of the child/youth, should be considered. The decision of whether the same case manager as the one working with the child/youth becomes involved in these referrals or assistance to the family unit will depend on the child/youth's circumstances and the organization of the case management operation.

Instructions for Scoring Items

1. Complexity is defined as the interference in standard care by biological, psychological, family/social, and health system factors, which require a shift from standard care to individualized care (in this situation, PICM) in order for the child/youth to

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overcome barriers to improvement. Each complexity item (also called a "cell") on the PICM-CAG is rated using four anchor points in a Likert-type scale. Each anchor point is designed to reflect a level of need, which in turn leads to specific actions to be taken by the PICM manager on behalf of the patient or family.

Whenever a variable is rated, in addition to the clinical anchor points as defined below, one should keep the following question in mind: "Will the situation recorded for this complexity item interfere with health outcomes if standard medical care is given?" Another important consideration, particularly when there is debate between two anchor point levels for an individual item, e.g., scoring a "1" vs. a "2" or a "2" vs. a "3", is to consider the immediacy of need for action on behalf of the child/youth. The time frame for action can inform the final decision.

2. All "historical" variables refer to the child/youth's entire life with special attention to the year before assessment. The exception is the cell labeled "Access to care." Access to care (HHS1) relates to the preceding 6 months.
3. All "current" variables refer to the 30-day period prior to the date that the PICM-CAG assessment is completed.
4. All "vulnerability" variables refer to the 3- to 6-month period after the date that the PICM-CAG vulnerability scoring is performed, based on the difference from an estimate of the natural history of the child/youth's health state when given standard medical care.
5. Actions correspond to the following anchor point scores: "0," no action; "1," need for monitoring and/or prevention; "2," need for intervention plan and action *soon*; and "3," need for *immediate* intervention plan and action.
6. Several items in the complexity grid contain more than one content component that could be creating barriers to improvement, e.g., symptom severity *or* impairment in CB1, practitioner availability *or* clinic accessibility in CHS1, etc. (Table A9.1). When scoring each item, the content component with the *greatest* potential for creating a barrier to improvement should direct the score, rather than the "average" of the item components. For instance, for Coordination of care (CHS2), if there is excellent communication between a pediatrician and a child/youth's neurologist but no attempt by the pediatrician to find and/or communicate with a needed mental health specialist, the anchor point score would be "3" to reflect the problematic lack of coordination with the mental health provider.

Biological Domain

Items in the biological domain address how factors associated with physical conditions and their symptoms create barriers to the child/youth's optimal health.

In all situations except anchor point "3" for Diagnostic/therapeutic challenge (CB2), these items refer specifically to physical health issues. For CB2, anchor point "3" includes the potential for nonphysical factors, such as somatic preoccupation, a

Table A9.1 Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG)

ID number _______________ **Age** _____________ **Gender** ______

Date	**Health risks and health needs**					
Name	**Historical**		**Current state**		**Vulnerability**	
Total score=	Complexity item	Score	Complexity item	Score	Complexity item	Score
Biological Domain	Chronicity (HB1)		Symptom severity/impairment (CB1)		Complications and life threat (VB)	
	Diagnostic dilemma (HB2)		Diagnostic/therapeutic challenge (CB2)			
Psychological Domain	Coping with stress (HP1)		Treatment adherence (CP1)		Learning and/or mental health threat (VP)	
	Mental health history (HP2)		Mental health symptoms (CP2)			
	Cognitive development (HP3)					
	Adverse developmental events (HP3)					
Social Domain	School functioning (HS1)		Residential stability (CS1)		Family/school/social system vulnerability (VS)	
	Family and social relationships (HS2)		Child/youth support (CS2)			
	Caregiver/parent health and function (HS3)		Caregiver/family support (CS3)			
			School and community participation (CS4)			
Health System Domain	Access to care (HHS1)		Getting needed services (CHS1)		Health system impediments (VHS)	
	Treatment experience (HHS2)		Coordination of care (CHS2)			

Table A9.2 Biological domain

HB1	**Chronicity**
0	Less than 3 months of physical symptoms/dysfunction; acute health condition
1	More than 3 months of physical symptoms/dysfunction or several periods of less than 3 months
2	A chronic condition
3	Several chronic conditions
HB2	**Diagnostic dilemma**
0	No period of diagnostic complexity
1	Diagnosis was clarified quickly
2	Diagnostic dilemma solved but only with considerable diagnostic effort
3	Diagnostic dilemma not solved despite considerable diagnostic effort
CB1	**Symptom severity/impairment**
0	No physical symptoms or symptoms resolve with treatment
1	Mild symptoms and/or interference with current functioning
2	Moderate symptoms and/or impaired current functioning
3	Severe symptoms and/or inability to perform many functional activities
CB2	**Diagnostic/therapeutic challenge**
0	Uncomplicated diagnosis; treatment with few unpleasant side effects or risks
1	Clear differential diagnoses and/or diagnosis expected; noninvasive treatment with multiple components and/or minor but tolerable side effects
2	Difficult to diagnose but physical cause/origin expected; invasive treatment and/or multiple components with some risks and unpleasant side effects
3	Difficult to diagnose with interfering factors other than physical cause/origin; daily, complex, invasive, and/or cross-disciplinary treatment; potentially serious risks and toxic side effects
VB	**Complications and life threat**
0	Little or no risk of premature physical complications or limitations in activities of daily living
1	Mild risk of premature physical complications or limitations in activities of daily living
2	Moderate risk of premature physical complications or permanent and/or substantial limitations of activities in daily living
3	Severe risk of physical complications and/or serious permanent functional deficits and/or dying

mental health cause for physical symptoms, and/or cross-disciplinary (physical and mental health) treatment to contribute to complexity. This is a common source of anchor point scoring confusion (Table A9.2).

Psychological Domain

Items in the psychological domain address how factors associated with health behaviors; coping styles; mental health conditions, which includes mental health and substance use disorders; cognitive function; and early life exposures create barriers to a child/youth’s optimal health (Table A9.3).

Table A9.3 Psychological domain

HP1	**Coping with stress**
0	Ability to adapt to stresses/life and health circumstances, such as through talking with parents/peers, sports, clubs, or hobbies
1	Restricted coping/problem solving skills, such as acting out with authority figures, dependency, or irritability; no anticipated long-term difficulties
2	Impaired coping/problem solving skills, such as frequent conflicts with parents/teachers or substance abuse but without serious impact on medical condition, mental health, or family/social situation; potential long-term difficulties
3	Minimal coping/problem solving skills, manifest by destructive behaviors, withdrawal, and social isolation, such as substance dependence, mental illness, self-inflicted harm, or illegal behavior
HP2	**Behavioral health history**
0	No history of behavioral health problems or conditions
1	Behavioral health problems or conditions, but resolved or without clear effects on daily function
2	Behavioral health conditions with clear effects on daily function, needing therapy, medication, day treatment, partial program, etc.
3	Psychiatric admissions and/or persistent effects on daily function
HP3	**Cognitive development**
0	No cognitive impairment
1	Possible developmental delay or immaturity; low IQ
2	Delayed development; mild or moderate cognitive impairment
3	Severe and pervasive developmental delays or profound cognitive impairment
HP4	**Adverse developmental events**
0	No identified developmental traumas or injuries, e.g., physical or sexual abuse, meningitis, lead exposure, etc.
1	Traumatic prior experiences or injuries with no apparent or stated impact on child/youth
2	Traumatic prior experiences or injuries with potential relationship to impairment in child/youth
3	Traumatic prior experiences with apparent and significant direct relationship to impairment in child/youth
CP1	**Treatment adherence**
0	Parent (caregiver) and/or child/youth are interested in receiving treatment and willing to cooperate actively
1	Some parent and/or child/youth ambivalence though willing to cooperate with treatment
2	Considerable parent and/or child/youth resistance with non-adherence; hostility or indifference toward healthcare professionals and/or treatments
3	Active caregiver and/or child/youth resistance to important medical care
CP2	**Mental health symptoms**
0	No mental health symptoms
1	Mild mental health symptoms, such as problems with risky behaviors or acting out, sadness, oppositionality, which do not interfere with current functioning
2	Moderate mental health symptoms, such as isolating, death preoccupation, defiance, or cognitive impairment, which interfere with current functioning
3	Severe psychiatric symptoms and/or behavioral disturbances, such as violence, self-inflicted harm, criminal behavior, severe autistic behaviors, psychosis, or mania

(continued)

Table A9.3 (continued)

VP	Learning and/or behavioral health threat
0	No mental health or intellectual deterioration concerns
1	Mild risk of mild worsening due to poor coping, mental health or cognitive *symptoms*, such as home or school conflict, anxiety, feeling blue, substance abuse or cognitive disturbance with limited impact on function; mild risk of treatment resistance (ambivalence)
2	Moderate risk of impaired coping, mental health, or cognitive functioning requiring additional mental healthcare; moderate risk of treatment resistance
3	Severe risk of problems due to poor coping, psychiatric disorder or cognitive impairment requiring frequent ER visits, hospital admissions, and/or specialized schooling; risk of treatment refusal for serious psychiatric disorder

Among historical items, Cognitive development (HP3) is separated from Mental health history (HP2) since it is commonly associated with barriers to health improvement in youth and often, independently, requires home-based and education-related intervention. Among current items on the other hand, active cognitive difficulties are included under Mental health symptoms (CP2). Each may require focused intervention.

While Adverse developmental events (HP4) can result from mental health, e.g., sexual abuse, and physical causes, e.g., fetal alcohol syndrome or lead exposure, they are included in the psychological domain since symptoms associated with them are typically cognitive or behavioral in nature. When exposure to toxic injuries leads to active physical symptoms or impairments, they would be scored under Symptom severity/impairment (CB1) in the biological domain. Unrecognized Adverse developmental events can make it difficult to determine the etiology of symptoms (HB2).

Treatment adherence (CP1) can occur as a result of parent issues, child/youth issues, or a combination of both. Regardless of the etiology, attention to the child/youth and the caregiver will be necessary in order to improve adherence. In rare life-threatening health situations of a youth, e.g., parental refusal of life-saving chemotherapy for the youth, it may be necessary to involve child protective services in order to ensure safety and appropriate care.

Family/Social Domain

Items in the family/social domain address how relationships, social connectedness and support, living arrangements, and function in the community, in the school setting, and with peers create barriers to a child/youth's optimal health. They also address the child/youth's family unit health and function (HS3) as well as their support system (CS3), since deficits in either can create barriers to optimal health for the child/youth (Table A9.4).

The focus of the family/social domain is on assuring the optimal health and well-being of the child/youth although it includes the assessment of complexity issues related to the family unit. To the extent that the child/youth's PICM manager can

Table A9.4 Family/social domain

HS1	**School functioning**
0	Performing well in school with good achievement, attendance, and behavior
1	Performing adequately in school although some achievement, attendance, and behavior problems, e.g., missed classes, pranks
2	*Experiencing moderate problems with school achievement, attendance, and/or behavior, e.g., school disciplinary action, few social or school-related peer relations, academic probation*
3	Experiencing severe problems with school achievement, attendance, and/or behavior, e.g., homebound education, school suspension, violence, illegal activities at school, academic failure, school dropout, disruptive peer group activity
HS2	**Family and social relationships**
0	Stable nurturing home, good social and peer relationships
1	Mild family problems, minor problems with social and peer relationships, e.g., parent-child conflict, frequent fights, marital discord, lacking close friends
2	Moderate level of family problems, inability to initiate and maintain social and peer relationships, e.g., parental neglect, difficult separation/divorce, alcohol abuse, hostile caregiver, limited number of peers, difficulties in maintaining same age peer relationships
3	Severe family problems with disruptive social and peer relationships, e.g., significant abuse, hostile child custody battles, addiction issues, parental criminality, complete social isolation, little or no association with peers
HS3	**Caregiver (parent) health and function**
0	All caregivers healthy
1	Physical and/or mental health issues, including poor coping skills and/or permanent disability, present in one or more caregiver, which do not impact parenting
2	Physical and/or mental health conditions, including disrupted coping resources and/or permanent disability, present in one or more caregiver, that interfere with parenting
3	Physical and/or mental health conditions, including disrupted coping styles and/or permanent disability, present in one or more caregiver that prevent effective parenting and/or create a dangerous situation for the child/youth
CS1	**Residential stability**
0	Stable housing and financial support for personal growth needs
1	Mild stress with multiple moves, school changes, financial issues
2	Moderate stress with unstable housing and/or living situation support, e.g., living in shelter, poor nutrition; change of current living situation is required
3	Severe stress with no current satisfactory housing, e.g., homelessness, transient housing, child/youth malnourished, or dangerous environment; immediate change is necessary
CS2	**Child/youth support**
0	Supervision and/or assistance readily available from family/caregiver, friends/peers, teachers, and/or community social networks, e.g., spiritual/religious groups, at all times
1	Supervision and/or assistance generally available from family/caregiver, friends/peers, teachers, and/or community social networks; but possible delays
2	Limited supervision and/or assistance available from family/caregiver, friends/peers, teachers, and/or community social networks
3	No effective supervision and/or assistance available from family/caregiver, friends/peers, teachers, and/or community social networks at any time

(continued)

Table A9.4 (continued)

CS3	Caregiver/family support
0	Assistance readily available from family, friends, and/or acquaintances, such as work colleagues/employer, at all times
1	Assistance generally available from family, friends, and/or acquaintances, such as work colleagues/employer, but possible delays
2	Limited assistance available from family, friends, and/or acquaintances, such as work colleagues/employer
3	No assistance available from family, friends, and/or acquaintances, such as work colleagues/employer at any time
CS4	**School and community participation**
0	Attending school regularly, achieving and participating well, and actively engaged in extracurricular school or community activities e.g., sports, clubs, hobbies, religious groups
1	Average of 1 day of school missed/week and/or minor disruptions in achievement and behavior with few extracurricular activities
2	Average of 2 days or more of school missed/week and/or moderate disruption in achievement or behavior with resistance to extracurricular activities
3	Truant or school nonattendance with no extracurricular activities and no community connections
VS	**Family/school/social system vulnerability**
0	No risk from living situation; adequate social, personal, and developmental support; caregiver health and function
1	Risk of need for additional living situation stability, social or school support, and/or family/caregiver intervention
2	Risk of need for temporary or permanent alteration in home, school, and/or family/caregiver/social environment in the foreseeable future
3	Risk of need for immediate temporary or permanent alteration in home, school, and/or family/caregiver/social environment, e.g., assist with foster home placement, referral to child protective services

address the family unit contributions to barriers to improvement within a reasonable time frame, they should be included in the assist actions of the PICM manager. There are, however, some situations in which the needs of members the family unit are of such a severe nature or are in excess of the time available for the PICM manager to effect change. In these cases, the family unit member should be encouraged or assisted in finding his/her own case manager or should be connected with appropriate community resources. Since this is not always possible, consideration of involvement by child protective services for the child/youth may be necessary.

School functioning (HS1) is intended to target school attendance, whereas School and community participation (CS4) is more concerned with how the child/youth is performing socially, behaviorally, and academically in school relative to his/her estimated cognitive capabilities. Family and social relationships (HS2) addresses factors that affect the ability to form and sustain relationships within and outside of the home (CS4). While Residential stability (CS1) is nearly entirely associated with the housing itself in adults, it also includes the nutritional health needs and safety for children/youth.

Health System Domain

Items in the Health system domain address issues related to access, ability to get needed care, and the coordination of services among the child/youth's treating clinicians. Items in this domain also assess the child/youth's and/or the family unit's experiences with providers that create barriers to the child/youth's optimal health, such as personality conflicts, loss of trust, or forced doctor-patient relationships due to insurance, geographic constraints, or other factors (Table A9.5).

Table A9.5 Health system domain

HHS1	**Access to care**
0	Adequate access to care with insurance coverage stability
1	Some limitations in access to care due to financial/insurance problems, geographic reasons, family issues, language, or cultural barriers
2	Difficulties in accessing care due to financial/insurance problems, geographic reasons, family issues, language, or cultural barriers
3	No adequate access to care due to financial/insurance problems, geographic reasons, family issues, language, long waiting lists, or cultural barriers
HHS2	**Treatment experience**
0	No child/youth or parent/caregiver problems with healthcare professionals
1	Negative child/youth or parent/caregiver experience with healthcare professionals
2	Child/youth or parent/caregiver dissatisfaction with or distrust of doctors; multiple providers for the same health problem; trouble keeping consistent and/or preferred provider(s)
3	Repeated major child/youth or parent/caregiver conflicts with or distrust of doctors, frequent ER visits or involuntary admissions; forced to stay with undesirable provider due to cost, provider network options, or other reasons
CHS1	**Getting needed services**
0	Easily available treating practitioners and healthcare settings (general medical or mental healthcare); money for medications and medical equipment
1	Some difficulties in getting to appointments or needed services
2	Routine difficulties in coordinating and/or getting to appointments or needed services
3	Inability to coordinate and/or get to appointments or needed services
CHS2	**Coordination of care**
0	Complete practitioner communication with good coordination and transition to age-appropriate care
1	Limited practitioner communication and coordination of care; pediatrician coordinates medical and mental health services
2	Poor communication and coordination of care among practitioners; no routine pediatrician; difficulty in transitioning to age-appropriate care
3	No communication and coordination of care among practitioners; primary ER use to meet non-emergent health needs; systemic barriers to age-appropriate care transition
VHS	**Health system impediments**
0	No risk of impediments to coordinated physical and mental healthcare
1	Mild risk of impediments to care, e.g., insurance restrictions, distant service assess, limited provider communication, and/or care coordination/transition
2	Moderate risk of impediments to care, e.g., potential insurance loss, inconsistent practitioners, communication barriers, poor care coordination/transition
3	Severe risk of impediments to care, e.g., little or no insurance, resistance to communication, and/or disruptive work processes that lead to poor coordination/transition among providers

Some find the distinction between Access to care (HHS1) and Getting needed services (CHS1) confusing. HHS1 is intended to assess whether services are available to the child/youth for his/her health problems at a system level. For instance, even if the child/youth lives in a clinician-rich community, he/she may have had little access to needed services due to lack of or poor insurance coverage, the paucity of interpreters, and culturally naïve practitioners, among others. Thus, limitations in access to care under HHS1 may extend beyond the child/youth's available and appropriate practitioners. If the child/youth is uninsured or underinsured, then medications, medical devices, and/or ancillary treatments, such as respiratory therapy, may become out-of-pocket expenses. If these costs are beyond the family unit's ability to pay, such treatment needs are essentially inaccessible.

Unlike HHS1, Getting needed services (CHS1) is more concerned with the child/youth's ability to actually attend appointments with one or more practitioners and/or to adhere to treatments recommended. For instance, if a child/youth and/or the family unit has limited transportation capabilities and/or no phone, it may become logistically impossible to show up for appointments or to renew prescriptions. If the child/youth and/or family has limited resources, it may be difficult or impossible to cover co-payments or medication costs. Thus, CHS1 has more to do with the mechanics of getting the care than health system issues which limit access to providers or services.

Lack of Coordination of care (CHS2) is a major contributor to persistent health complexity. In order for coordination among clinicians to occur, it is necessary for those involved in a child/youth's treatment to know who else is giving care and for what. While this is most often thought of in terms of direct written and/or verbal communication among practitioners, it also, and importantly, includes access by all providers to a child/youth's health records, which document previous assessments and treatment. This is particularly important in children/youth with both physical and mental health problems since general medical and mental health record systems are often disconnected. Thus, if noncommunicating health record systems contribute to a lack of awareness by any of the practitioners about contributing health problems and/or treatments, then this would influence higher anchor point scores for CHS2.

The transition of care for adolescents with health complexity from pediatricians and child mental health professionals to adult providers is a special contributor to persistence of complexity for youth. Difficulties with this transition process are assessed under the item labeled Coordination of care (CHS2). As mentioned in the general instructions above, if there is good communication among the child/youth's treating practitioners but there is difficulty in identifying adult clinician counterparts to assume care responsibilities, then problematic transition may lead to anchor point scores of "2" or "3" based on the level of the barrier to improvement encountered.

Appendix 10: Pediatric ICM-CAG Item Anchor Point Actions

Each of the Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG) anchor points is designed to inform actions by case managers. The following is a list of actions that could be considered when a child/youth has a specific score on an item in the PICM-CAG. *The actions listed below are not considered exhaustive but rather representative of the types of action that a case manager could consider taking on behalf of a child/youth.* Actions by case managers should be taken in an attempt to correct barriers to improvement, the primary goal of the PICM-CAG, and the central aim when working with children/youth suffering with health complexity.

In this Appendix, actions are delineated for each score on each item in the PICM-CAG. It should be noted that items within the grid are often connected with each other, i.e., they interact as barriers to improvement for children/youth. As a result, the case manager should not only consider the actions associated with the item score as they create a care plan, but should also consider how the item score relates to other item scores in the grid. For instance, the parents of a child/youth may change doctors often due to poor trust of doctors and/or the healthcare industry (a score of "2" on HHS2). As a result, the child/youth is non-adherent to treatment (a score of "3" on CP1). Since poor trust by the parents (HHS2) is connected with non-adherence (CP1), actions on both items should be considered in tandem, e.g., discuss barriers related to trust with the parents and their doctors, and the use of education and motivational interviewing techniques to improve the parents' and child/youth's adherence.

Working with children/youth creates an additional challenge for case managers since it is not just the child/youth, but also members of the family unit who may be the focus of case managers' actions. It is important to remember that the child/youth is the primary target of the case management when the PICM-CAG is being used. Having said this, in many situations, the family unit is just as complex and/or needy as the child/youth and thus requires active participation in the child/youth's intervention. In some situations, the actions directed at issues specifically for a parent are in excess of time available to the case manager. When this occurs, the case manager will have to make a decision whether one or more members of the family unit warrant referral to social services themselves, need assignment of their own case manager, and/or whether alternative guardianship of the youth should be considered. If the organization has the necessary resources, enrollment of others in the family unit will be considered essential to the best outcome of the child/youth. These are clinical questions that will require discussion with supervisors, Medical Directors, the child/youth's clinicians, and perhaps others.

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Instructions to Case Managers

1. The PICM-CAG assesses complexity in children/youth (Table A10.1) Each item score (also called a “cell score”) on the PICM-CAG suggests the need for action by the case manager working with the family unit and/or the child/youth. A score of “1” (yellow) suggests the need for monitoring/prevention; “2” (orange) the need to do something soon, i.e., intervention/plan development; and “3” (red) the need for immediate intervention/plan development. To the extent possible, activities by the case manager, the child/youth, and the child/youth’s parents should be a part of a child/youth-parent-manager developed care plan with goals and objectives. These care plans must then be communicated to the child/youth’s practitioners with a request for their active participation.
2. *All care plans will include education of the child/youth and family unit about the child/youth’s illnesses, the interaction of illnesses, and treatments*. Often the case manager will provide information about diseases or help the child/youth and parents formulate questions for their physicians. Physicians and other treating professionals should serve as the primary arbiter of information and treatment when possible. Thus, communication between the case manager and the child/youth’s clinicians is of significant importance. Finally, when appropriate and with informed consent, school personnel who might be able to facilitate access to needed school resources and/or assist with maximizing educational and school experiences should also be informed of the health and health needs of the child/youth.
3. Pediatric case managers do not treat patients; they support approaches to care that are likely to improve outcomes, break down barriers, and assist with health system navigation. They serve as health coaches for complex children/youth and their parents. Since clinicians are the focal point of effective treatment, it is important for case managers to form alliances with the child/youth’s treatment team as they work with the child/youth. This can be facilitated by sending a flier to practitioners describing case management and the role it can play in assisting with complex care (Appendix 12). It is important to point out the intended but limited duration of involvement by the case manager, though PICM involvement could be extended, e.g., a year or more.
4. Many of the cells on the PICM-CAG are associated with barriers to treatment adherence. Though child/youth or parent-based innate unwillingness to follow treatment recommendations (CP1) is one reason for non-adherence, it is by no means the only, nor necessarily, main reason. Other examples include, but are not limited to, insufficient funds to pay for treatment, memory deficits, language barriers, and contrary advice from family members. The family may lack the necessary transportation resources to access specialty care offices or get to therapy services. Lack of a full understanding of the need for the breadth and frequency of recommended services can also serve as a barrier. Since non-adherence is clearly associated with worse clinical outcomes, the case manager, the child/

Table A10.1 Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG)

ID number _______________ **Age** _____________ **Gender** ______

Date	**Health risks and health needs**					
Name	**Historical**		**Current state**		**Vulnerability**	
Total score=	Complexity item	Score	Complexity item	Score	Complexity item	Score
Biological Domain	Chronicity (HB1)		Symptom severity/impairment (CB1)		Complications and life threat (VB)	
	Diagnostic dilemma (HB2)		Diagnostic/therapeutic challenge (CB2)			
Psychological Domain	Coping with stress (HP1)		Treatment adherence (CP1)		Learning and/or mental health threat (VP)	
	Mental health history (HP2)		Mental health symptoms (CP2)			
	Cognitive development (HP3)					
	Adverse developmental events (HP3)					
Social Domain	School functioning (HS1)		Residential stability (CS1)		Family/school/social system vulnerability (VS)	
	Family and social relationships (HS2)		Child/youth support (CS2)			
	Caregiver/parent health and function (HS3)		Caregiver/family support (CS3)			
			School and community participation (CS4)			
Health System Domain	Access to care (HHS1)		Getting needed services (CHS1)		Health system impediments (VHS)	
	Treatment experience (HHS2)		Coordination of care (CHS2)			

youth, the parent, and the child/youth's care providers should work together in all domains and in all cells to reverse barriers to treatment adherence.

5. No action is required for items in which a score of "0" is made.

Biological Domain

Actions related to items in the biological domain are intended to address barriers to improvement for physical conditions and their symptoms (Table A10.2). In all situations, except anchor point "3" for item CB2 "Diagnostic/therapeutic challenge," these items refer specifically to taking action related to physical health issues themselves. In fact, it is this activity that forms the core of traditional case management, which focuses on correction of inconsistent adherence to evidence-based treatments for physical illness. Since the CB2 anchor point "3" includes nonphysical factors as a cause of physical symptoms, such as poor family support, Munchausen's by proxy, or a psychiatric illness, actions related to this item diverge from traditional case management and include assistance with items in other domains and potentially with mental health providers and treatment.

In the current healthcare environment, pediatricians may have difficulty addressing behavioral health conditions. Even in children/youth with "subsyndromal" Mental health symptoms (CP2), treating these minor symptoms can be the tipping point between persistent biological symptoms with treatment nonresponse and health stabilization with reduced impairment. In children/youth who score "3" on CB2, even when interacting CP2 or other nonbiological items are scored "1" or "2," clinicians should be encouraged to intervene related to the nonbiological items early in the integrated case management process as an indirect means of altering the "3" score on CB2.

Psychological Domain

Actions related to items in the psychological domain are intended to address barriers to improvement related to health behaviors, coping styles, prior mental conditions, and current psychiatric symptoms (Table A10.3). Children/youth exposed to early biological and/or psychological insults, which lead to altered emotions, behaviors, and/or cognitions, may also require action on the part of the case manager.

Among historical items, actions related to Cognitive development (HP3) are separated from Mental health history (HP2) since they often require independent special attention to educational needs and participation of the school system. Among current items on the other hand, actions associated with active cognitive difficulties

Table A10.2 Biological domain

HB1	Chronicity
1	**Physical symptoms/dysfunction present for more than 3 months**: assure child/youth/caregiver's understanding of the persistent dysfunction; observe to see if the condition turns chronic with physical limitations; assure pediatric follow-up
2	**A chronic condition**: review child/youth/caregiver's understanding of illness and treatment; assure active and collaborative involvement by pediatrician and medical specialists, if needed; assess and assure treatment of co-occurring mental conditions; ongoing assessment of child/youth symptoms and/or measured outcomes over time, e.g., respiratory function, FEV1, etc.; unfettered access to physical health and mental health records by all treating clinicians
3	**Several chronic conditions**: immediately perform actions under #2; include customized actions based on interview; review child/youth/caregiver understanding of illnesses and treatments; confirm communication and coordination of care among practitioners about all conditions
HB2	**Diagnostic dilemma**
1	**Easy diagnoses**: observe for changes in clinical status
2	**Diagnostic dilemma solved with diagnostic effort**: review diagnoses, interventions, and treatments for fidelity with the child/youth's course and improvement with treatment; assess attitude of child/youth/caregiver about diagnosis and work-ups and educate about process; bring in case management Medical Director to review if it is outside the case manager's level of expertise to get a "big picture" assessment of accuracy of diagnoses and treatment; doc to doc if needed and appropriate to discuss ways that case management can assist her/him in improving outcomes; assure assessment for concurrent mental conditions has been done and treatment is being given, if present; communicate current understanding with child/youth/caregiver
3	**Diagnostic dilemma not solved despite considerable diagnostic efforts**: immediately perform actions under #2; include customized actions based on interview; case manager serves as communication link among physicians caring for patient, the case management Medical Director, and the child/youth/caregiver to maintain communication, collaboration, and outcome orientation; seek child/youth/caregiver input about their thoughts on the unresolved problem
CB1	**Symptom severity/impairment**
1	**Mild symptoms; no functional impairment**: observe; review for less invasive, less expensive treatment options
2	**Moderate symptoms; impairment present**: assure treatment provided is coordinated through efforts of the pediatrician and other care professionals with active involvement of mental health "team" for children/youth with comorbid mental conditions when they destabilize; ongoing assessment of child/youth symptoms over time, e.g., labs, X-rays, complications, etc.; unfettered access to physical health and mental condition records by all treating clinicians; evaluate parent/caregiver understanding of illness and impairment—educate; assist with repair of impairment; with permission, share summary of health situation with school
3	**Severe symptoms leading to inability to perform many functional activities**: immediately perform actions under #1 and #2; include customized actions based on interview; assist with ongoing communication among practitioners; maximize adherence; enlist caregiver assistance; consider alternative treatment settings, living arrangements, rehabilitation services; augment home care availability; enlist case management Medical Director assistance and suggestions when needed; find out what works best for the child/youth

(continued)

Table A10.2 (continued)

CB2	Diagnostic/therapeutic challenge
1	**Quick diagnoses expected with easy treatments**: observe for change in status
2	**Difficult to diagnose and treat; physical cause/origin; invasive treatment expected**: scrupulously assure that child/youth is following through on evaluations and treatments; involve caregiver; make sure that all clinicians know the outcomes of exams and tests done by colleagues; assist in measuring outcomes of interventions; maintain communications with patient and clinical team; have case management Medical Director review case for additional ideas and talk to clinicians, if warranted; assist child/youth/caregiver in getting answers to questions about health from practitioners; consider setting up a case conference among clinicians
3	**Difficult to diagnose with psychological, social, economic issues clouding picture; toxic and/or multidisciplinary treatments**: immediately perform actions under #2 and customized actions based on interview; make sure that clinicians know about mental conditions, social, and health system factors that may be playing a role and that child/youth is seen in a timely fashion; have case management Medical Director talk with child/youth's clinicians about expanded differential and potential treatment; facilitate mental health referral through pediatrician if possible; include child/youth/caregiver in discussions about the role of nonphysical factors in symptoms/treatment
VB	**Complications and life threat**
1	**Mild risk of premature physical complications or limitations in activities of daily living**: assure adherence to treatment and troubleshoot barriers that crop up; consider transfer back to standard care
2	**Moderate risk of premature physical complications or permanent and/or substantial limitations in activities of daily living**: follow through on adherence to treatment and troubleshoot barriers that crop up; establish continuity of physical and mental condition services, including needed environmental aids, respite care, and palliative care; stabilize communication and collaboration among providers and with child/youth/caregivers; establish methodology to follow clinically relevant outcomes with child/youth and clinicians, e.g., HbA1c, visits to ER, missed work/disability, etc.; monitor with case management Medical Director through case conferences; consider intermittent long-term contact with patient
3	**Severe risk of physical complications and serious permanent functional deficits and/or dying**: immediately perform actions under #2; include customized actions based on interview; assure follow through; intermittent long-term contact with patient until risks change; assist with hospice or long-term care, if appropriate

are included under Mental health symptoms (CP2) since they are likely to require both behavioral and system level intervention.

While adverse Developmental events (HP4) can result from mental health, e.g., sexual abuse, and physical, e.g., fetal alcohol syndrome or lead exposure, causes, actions related to them are included in the psychological domain since they are typically associated with emotional, cognitive, or behavioral interventions, though additional physical testing may be warranted. When exposure to toxic occurrences leads to active physical symptoms or impairments, actions would be initiated under Symptom severity/impairment (CB1) in the biological domain.

Table A10.3 Psychological domain

HP1	Coping with stress
1	**Restricted coping skills**: active listening and child/youth/caregiver education; assure/encourage counseling for child/youth in coping mechanisms; consider training in stress reduction techniques (1–3 sessions, often with a child/youth or school counselor)
2	**Impaired coping skills with frequent conflicts and/or substance abuse**: identify support for stressful situations; counseling on coping mechanisms; training in stress reduction and conflict resolution techniques (1–5 sessions, often with a child/youth or school counselor); involvement by caregiver and educational system to address school-related issues/stressors; adjustments in living/school location/activities, if appropriate; consider talking with pediatrician about substance abuse and/or mental health referral for assessment
3	**Minimal coping skills with dangerous behaviors**: immediately perform actions under #2; include customized actions based on interview; activate support system or crisis management for child/youth in collaboration with providers; mental health assessment and intervention, e.g., psychotherapy or medication; encourage substance abuse/dependence treatment referral
HP2	**Behavioral health history**
1	**Behavioral conditions resolved or without effect on life activities**: regular pediatric screens for mental conditions with intervention if appropriate; check for access to support from child/youth mental health professionals
2	**Behavioral conditions that interfered with life activities or required treatment**: insure understanding of conditions by child/youth/caregiver in lay language; link medical and physical conditions, if indicated; assure active and appropriate involvement by child psychiatrist and mental health "team" (psychologists, social workers, nurses, substance use disorder and other counselors, etc.) when conditions destabilize; primary maintenance and continuation treatment provided by pediatrician (medical home) with mental health specialist assistance; ongoing assessment of patient symptoms over time; communication and unfettered access to physical and mental health records by all treating clinicians
3	**Psychiatric admissions and/or persistent effects on daily function**: immediately perform actions under #2; include customized actions based on interview; primary involvement and treatment by a mental health team for mental conditions working in close collaboration with pediatrician who cares for concurrent physical illness; when possible, physical and mental health personnel should be located and actively interact in integrated clinic settings
HP3	**Cognitive development**
1	**Possible developmental delay or immaturity/low IQ**: assist in establishing level of impairment, including capacity of child to communicate physical needs and symptoms; discuss level of impairment and needs with caregivers, educator, and the pediatrician to assure appropriate placement in school system; assess need for remedial educational assistance and home support; observe
2	**Delayed development; mild or moderate mental retardation**: perform actions under #1; assist caregiver/parent and pediatrician in identifying appropriate educational placement and support; review performance/adjustment issues with school facility; involve social services if needed; assess and assist with home support for child/youth based on functional capabilities and respite for caregivers/parents; assess and share child/youth's ability to communicate
3	**Severe and pervasive developmental delays or profound mental retardation**: immediately perform actions under #1 and #2; include customized action based on interview; work with caregiver, pediatrician, and other clinicians to assure appropriate support for child/youth special needs; consider and assist with placement options, if necessary

(continued)

Table A10.3 (continued)

HP4	Adverse developmental events
1	**Traumatic prior experiences/injuries with no impact on child/youth**: observe for previously unrecognized symptoms; inform pediatrician of traumatic experiences/injuries
2	**Traumatic prior experiences/injuries with impairment in child/youth**: encourage referral to medical specialist for toxic exposure/brain injury assessment and/or mental health specialist for consideration of psychological intervention; confirm no further exposure to toxic cause; discuss insult and potential consequences with caregiver, pediatrician, and case management Medical Director
3	**Traumatic prior experiences with significant impairment in child/youth**: immediately perform actions under #2; include customized actions based on interview; assure toxic event outcomes are being addressed, e.g., therapy or other mental health treatment, change in living situation, etc.; report reportable health events, e.g., abuse
CP1	**Treatment to adherence**
1	**Ambivalence**: educate child/youth/caregivers about illnesses/treatments; discussion between case manager and child/youth/caregivers about resistant behaviors using motivational interviewing and problem solving techniques to reduce resistance (activity best performed sensitively by the case manager or the child/youth's practitioner when she/he has been informed of the problem); inform providers of adherence problems and work with them to consider alternative interventions
2	**Resistance, hostility, indifference**: perform actions under #1; include customized actions based on interview; review need for other health professional or clinic to provide care with case manager's Medical Director; explore source of resistance, e.g., anxiety, home situation, family members, religion, complicated by school setting, culture, relationship with treating physician (try to correct)
3	**Active resistance**: immediately perform actions under #1 and #2; include customized actions based on interview; work with treating clinicians in considering and instituting alternative interventions; if needed, work with case management Medical Director to find "second-opinion" practitioners; if irresolvable and pervasive, consider discontinuation of case management; report reportable event, e.g., parent treatment refusal for life-threatening but treatable medical illness in minor
CP2	**Mental health symptoms**
1	**Mild mental health symptoms**: assure pediatric treatment with access to support from mental health professionals; unfettered access to physical and mental health records by all treating clinicians
2	**Moderate mental health symptoms**: perform actions under #1; include customized actions based on interview; assure that acute, maintenance, and continuation treatment is being provided by the pediatrician with mental health support and backup; facilitate primary maintenance and continuation treatment provided by pediatrician (medical home) with mental health specialist assistance, i.e., a child psychiatrist and mental health "team" (psychologists, social workers, nurses, substance abuse counselors, etc.) when conditions destabilize, become complicated, and/or demonstrate treatment resistance; institute symptom documentation recording system; assure crisis plan
3	**Severe psychiatric symptoms and/or cognitive disturbances**: perform actions under #1 and #2; include customized actions based on interview; active and aggressive treatment for mental conditions by a mental health team working in close collaboration with the pediatrician, who cares for concurrent physical illness; when possible, geographic colocation of physical and mental health personnel to facilitate ease of coordinating treatment; confirm persistent symptom documentation recording system; assure physical and mental health treatment adherence

(continued)

Table A10.3 (continued)

VP	Learning and/or behavioral health threat
1	**Mild risk of worsening mental health or cognitive symptoms**: insure access to support; assure/encourage continuous follow-up care with intermittent mental health assessments when appropriate; booster sessions for coping and stress reduction when needed; educate caregiver about importance of mental health treatment; consider transfer back to standard care
2	**Moderate risk of mental health disorder or more impaired cognitive functioning:** perform actions under #1; include customized actions based on interview; set up maintenance and continuity program which involves the treating pediatrician, clinical nurse specialists, and mental health specialists in the pediatric clinic; establish a regular symptom documentation system; assist with guidelines for increased mental health team involvement in the pediatric clinic to assist with treatment adjustments (best provided in an integrated pediatric clinic); address adherence and patient-provider relationship issues; involve caregivers in all activities after informed consent obtained
3	**Severe risk of persistent psychiatric disorder or cognitive impairment with frequent health service use**: immediately perform actions under #1 and #2; include customized actions based on interview; confirm care continuity; establish verbal, paper, and electronic communication capabilities for all clinical professionals working with the patient; work with the patient's clinicians in establishing clinical goals with the patient; consider long-term involvement

Coping with stress (HP1) are to be differentiated from Mental health symptoms (CP2) since they relate more to the ability of the child/youth to respond appropriately to life stresses than the demonstration of psychologically abnormal behaviors. Coping issues are generally handled by assisting the child/youth learn more adaptive coping skills and modifying the child/youth's exposure to stressful situations, if possible. When problems with coping are associated with dangerous behaviors, such as substance dependence or self-damaging actions, then mental health conditions may coexist that also require intervention. Providers involved in the child/youth's care should be kept aware of a child/youth's stress handling capacity.

Family/Social Domain

Actions related to items in the Family/social domain are intended to address barriers to improvement related to difficulties in forming relationships; establishing social connectedness and support; and functioning in a community, the school setting, and with peers (Table A10.4). Actions in this domain also include those related to the child/youth's parents' health and function and their support system. In these latter two content areas, actions are often directed specifically at helping to improve the situation of the parent, rather than the child/youth, since deficits in either can create barriers to optimal health for the youth.

Table A10.4 Family/social domain

HS1	**School functioning**
1	**Average to poor school performance and peer associations**: observe and initiate assistance mechanism if needed
2	**Disrupted school activity**: talk with child/youth, caregiver, and school officials to clarify cause of situation; consider assisting with care conference; assist in setting up help by school counselor; inform pediatrician of school-related activity
3	**Destructive school activity**: immediately perform actions under #2; include customized actions based on interview; assist pediatrician with referral for mental health assessment; assist in setting up conference with caregiver, school, pediatrician, and other health professionals about alternative schooling possibilities, corrective actions; involve case management Medical Director if needed
HS2	**Family and social relationships**
1	**Mild family problems; good social and peer relationships**: observe interpersonal difficulties during patient interviews and adjust recommendations to accommodate for limitations, i.e., introversion, family discord, etc.
2	**Significant level of family problems; limited social and peer relationships**: encourage social skills training (1–6 sessions, often with a counselor, include how to talk about health issues), family therapy; foster involvement with family, peers, school, social service, or legal system; assess impact of family problems on child/youth health issues, address if present; explore alternative socialization opportunities
3	**Severe family problems; no social or peer relationships**: immediately perform actions under #1 and #2; include customized actions based on interview; assure social skills training; address bullying situation; consider guardianship, school change, altered living situation; encourage mental health assessment and treatment if appropriate and/or needed through pediatrician; initiate family protective services and remediation if appropriate; report reportable health-related issues
HS3	**Caregiver/parent health and function**
1	**Poor health and/or impairment in at least one caregiver with minimal impact on child/youth**: document health and/or parental issue; share concern with case management Medical Director, school, and treating pediatrician as needed; observe child/youth and caregiver interactions to assure minimal negative impact on child/youth; if appropriate provide suggestions and support to affected caregiver for deficits
2	**Poor health and/or impairment in at least one caregiver with negative impact on child/youth**: perform actions under #1 but also assist caregiver obtain services and/or intervention for deficits; include customized actions based on interview; consider working with pediatrician to involve social services, counseling, medical assistance, other medical providers, etc.; review need for social skills training or conflict management
3	**Poor caregiver health and/or impairment with serious supervision deficits and/or danger for the child/youth**: immediately perform actions under #2; include customized actions based on interview; work with pediatrician and/or social service to determine need for corrective action and/or guardianship; facilitate the initiation of child protective services; assist caregiver obtain services and/or intervention for deficits, including physical and/or mental healthcare; report reportable health-related issues
CS1	**Residential stability**
1	**Inconsistent living situation**: make sure that child/youth's safety, supervision, and nourishment needs are being met

(continued)

Table A10.4 (continued)

2	**Unstable housing and/or living situation support**: in collaboration with the parents if possible, initiate contact with social service or other community resources to look into housing and food services options; get assistance to help correct the cause of the residential instability, e.g., financial limitations, family conflict, natural disaster, etc.; inquire about outcome; use knowledge of community resources to "push the system"
3	**Unsafe housing situation for child/youth**: immediately involve protective services to locate a safe living situation for the child/youth, e.g., foster home, youth facility; perform actions under #2; include customized actions based on interview; report reportable situations
CS2	**Child/youth support**
1	**Supervision and/or assistance generally available but possible delays**: initiate assistance mechanism if needed
2	**Limited supervision and/or assistance readily available**: talk with child/youth's caregivers; consider talking with peer families for support; set up with social services or other agency to assist patient find needed community resources and assist caregiver/parent correct supervision disruption; follow up on outcome; use knowledge of community resources to "push the system"; involve pediatrician and other health professionals in remedying situation
3	**No supervision and/or assistance readily available**: immediately perform actions under #2; include customized actions based on interview; involve child protection to assist with placement in an alternative location, e.g., foster home, group home, friend's house, relative's house; report reportable situations
CS3	**Caregiver/family support**
1	**Assistance generally available but possible delays**: initiate assistance mechanism if needed
2	**Limited assistance readily available**: talk with needy caregiver's available personal contacts about what they can do to assist the caregiver; set up with social services or other agency to assist parent/caregiver find needed community resources, adjust work situation, etc.; follow up on outcome; use knowledge of community resources to "push the system"; share situation with health professionals
3	**No assistance readily available**: immediately perform actions under #2; include customized actions based on interview; consider social services or individualized case management assistance for caregiver
CS4	**School and community participation**
1	**Missing up to 1 day of school/week and few extracurricular activities**: explore interests, hobbies with the child/youth and encourage initiation of activity; involve caregiver/parent in assisting child/youth to attend school more regularly and develop peer activities
2	**Missing average of 2 or more days of school/week with resistance to extracurricular activities**: assess reasons for resistance with child/youth, caregiver, and school; clarify school's understanding of child/youth health needs; assess reasons for peer activity nonparticipation, including health of child/youth; share information with pediatrician; collaborate with caregiver, educators, child/youth, and care providers in developing a remedial plan
3	**School nonattendance with no extracurricular activities or community connections**: immediately perform actions under #1 and #2; include customized actions based on interview; explore alternative ways to interact with peers; consider case management conference with caregivers, school personnel, pediatrician, mental health professionals, other and work with them on potential solutions; follow through on initiated activities

(continued)

Table A10.4 (continued)

VS	Family/school/social system vulnerability
1	**Some risk of housing, family, school, social needs**: see if current location can accommodate potential need; consider transfer back to standard care
2	**Risk of need for alteration in housing, family, school, social situation in the foreseeable future**: continue to work with family; assist, engage, and push social service to find resources and make ready the procedures for help and/or placement; follow up on outcome; use knowledge of community resources to "push the system"
3	**Risk of need for alteration in housing, family, school, social situation now and for the foreseeable future**: immediately perform actions under #2; include customized actions based on interview; attempt to set up long-term social service assistance

The focus of the Family/social domain is on assuring the optimal health and well-being of the child/youth, though it includes the assessment of complexity issues related to the parent. To the extent that the child/youth's case manager can address caregiver/parent-related barriers to improvement within a reasonable time frame, they should be included in the assist actions of the case manager. There are, however, some situations in which the needs of the parent are so severe that they are in excess of the time available for the case manager to effect change. In such situations, the parent should be assigned his/her own case manager or connected with community resources in an effort to obtain needed assistance. Since this is not always possible, involvement of child protective services for the child/youth may be necessary.

In several family/social domain items, e.g., Family and social relationships (HS2), Caregiver/parent health and function (HS3), and Residential stability (CS1), the level of need identified may be due to illegal family unit actions. In these situations, the case manager may be required either by law or necessity to personally report or to work with the treating practitioners in reporting to oversight authorities situations that are dangerous to the child/youth. In these situations, it is important for case managers, who are health professionals with legal reporting obligations, to know when and how to take action when it is necessary.

Health System Domain

Actions related to items in the Health system domain are intended to correct barriers to care access at a system level, to repair child/youth and/or parent-doctor interactions, to help patients get needed health services, and to assure that the clinicians treating the child/youth talk with each other and coordinate their care so that the child/youth returns to optimal health (Table A10.5).

Health system domain actions should be customized to the health business practices used in each country or state so that barriers to care can be systematically corrected.

Table A10.5 Health system domain

HHS1	Access to care
1	**Some limitation in accessing care:** assist in identifying culturally sensitive willing providers, interpretation services, and assuring timely appointments
2	**Difficulties in accessing care**: work with child/youth/caregiver in finding health insurance, in identifying culturally sensitive willing providers, and in assuring timely appointments (use conference calls if necessary); assist in "flexing benefits" (with health plan) when possible to get appropriate care (go up the supervisory ladder); connect physical and mental health support for services; assist with appeals of inappropriately denied care (use case management Medical Director, if necessary)
3	**No adequate access to care**: immediately perform actions under #2; include customized actions based on interview; enlist social service to assist with actions in #2 and in finding insurance product or general assistance clinic; assist with post-ER and hospitalization follow-up locations; advocate for child/youth
HHS2	**Treatment experience**
1	**Negative child/youth or caregiver experience with healthcare providers**: assess for adherence to assessment and treatment recommendations; periodically ask about current relationship with clinical staff; help with asking questions of practitioners
2	**Child/youth and/or caregivers dissatisfaction with or distrust of doctors; multiple and/or inconsistent providers**: assess types of conflicts with practitioners and conflict resolution supports at health center; adjudicate conflict when possible (directly or indirectly); foster communication between child/youth/caregiver and practitioner about conflicts; assist in getting to a preferred provider if possible where outcomes would be better; involve case management Medical Director for assistance
3	**Repeated major child/youth or caregiver conflicts with or distrust of doctors, frequent ER visits, or involuntary admissions**: immediately perform actions under #2; include customized actions based on interview; assist in finding someone to work with child/youth or caregiver/parent on conflict resolution techniques; involve the case management Medical Director to talk with practitioners about relationship; consider assisting child/youth and caregiver/parent find another professional or location of care; mental health consultation to assess for personality or chemical dependence issues contributing to conflict
CHS1	**Getting needed services**
1	**Some difficulties getting to appointments or needed services**: review correlation of disorders with treatment being given; check for barriers; assist with finding money for medications and needed services
2	**Routine difficulties in coordinating and/or getting to appointments or needed services**: assess alternative care locations and practitioner availability; review options with the child/youth/caregiver and assure timely access; consider accessing services through telemedicine; assist with finding money for medications and needed services; help child/youth get same-day appointments for different problems; check for flexibility in current clinic system; help child/youth and caregiver find needed medical and mental health specialists and set up appointments (out of region if necessary); review difficulties with pediatrician (medical home)
3	**Inability to coordinate and/or get to appointments or needed services**: immediately perform actions under #2; include customized actions based on interview; establish pediatric medical home; work with pediatrician (or specialty physician) to coordinate services, e.g., diabetologist for brittle diabetic child/youth; assist with transportation for child/youth/caregiver and coordination of assessments/follow-ups; enlist assistance of community agencies and social services

(continued)

Table A10.5 (continued)

CHS2	Coordination of care
1	**Limited practitioner communication and coordination of care**: encourage record sharing and communication among all clinicians, including mental health and complementary medicine; open links for important communication
2	**Poor communication and coordination of care among practitioners**: determine and augment communication links between physical and mental health practitioners; assure note sharing among clinicians working with child/youth; assist in coordinating appointments and transportation; help child/youth get same-day appointments for different problems; investigate availability of integrated clinics (medical home); determine reason for missed appointment (overcome barriers); assist with transition from pediatric care to adult practitioner care
3	**No communication and coordination of care among practitioners**: immediately perform actions under #1 and #2; include customized actions based on interview; serve as link for child/youth with various practitioners, i.e., fax accumulated clinical information to practitioners after release of information obtained; talk with treating practitioners on behalf of child/youth but also educate caregivers/parents on how to do so; create alternatives to emergency room use; enlist assistance from case management Medical Director to try to establish a medical home
VHS	**Health system impediments**
1	**Mild risk of impediments to care**: assure insurance benefits cover health needs; assist in maintaining coverage; review practitioner communication procedures; consider transfer back to standard care
2	**Moderate risk of impediments to care**: work with child/youth/caregiver, practitioner providing medical home, social services, and community agencies to establish the best health setup possible in the region; assist in finding insurance products, needed providers, and communicating clinic systems; pay special attention to physical and mental health links
3	**Severe risk of impediments to care**: immediately perform actions under #2; include customized actions based on interview; help child/youth and caregiver find and establish a medical home that will persist over time; assist in overcoming barriers to practitioner involvement with child/youth; consider setting up a physical and mental health clinicians case conference; attempt to enlist assistance of community-based case manager (public health); assure insurance benefits cover health needs; assist in maintaining coverage; review and assist with practitioner communication procedures

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Appendix 11: Understanding "Complexity Assessments" for Children/Youth and Families Helped by Integrated Case Management

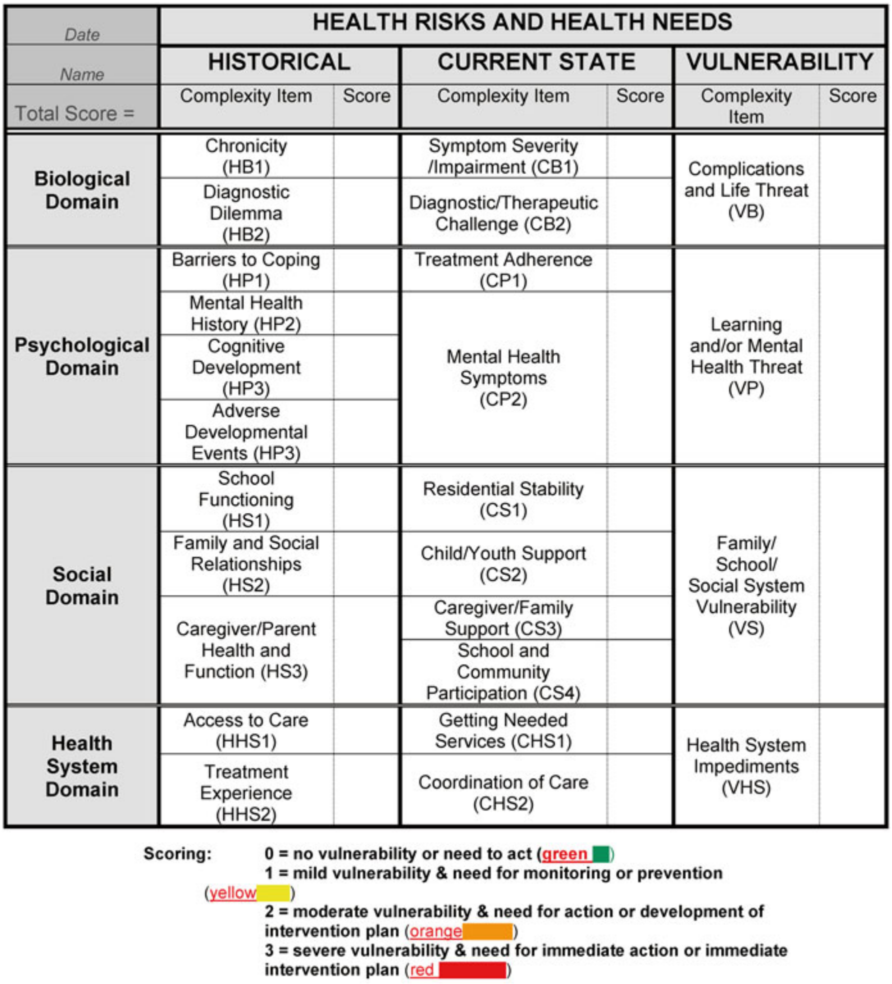
One of the greatest challenges for families of children/youth with health problems in the US health system is identifying the barriers that prevent them from gaining better control of their illnesses and improving their level of health. Only part of persistent health difficulties has to do with finding the right providers and getting the right treatment. Many other factors unrelated to an illness come into play that create barriers to improvement. The Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG) was developed to uncover health-related and non-health-related life circumstances that interfere with a child/youth and his/her family's ability to stabilize the child/youth's health (see below).

The Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG), based on work by members of the INTERMED Foundation in Europe but designed and tested by Cartesian Solutions, Inc.™ and the Case Management Society of America (CMSA), is a complexity assessment tool now used throughout the United States by health professionals (mainly case managers), in collaboration with children/youth and their families to untangle changeable circumstances that interfere with the child/youth's ability to get better. The PICM-CAG is divided into four domains, the biological, psychological, social, and health system, with 25 identified factors associated with challenges to health improvement. Each domain contains historical, current state, and vulnerability time frames with items scored based on their health concern seriousness and the immediacy of need using a zero to three color-coded scale. Much like a traffic light, red indicates a potentially significant barrier to health, while green suggests that there are no worries. Yellow and orange suggest intermediate risk.

The PICM-CAG is scored by a health professional, generally an experienced and specially trained case manager, after a discussion with the child/youth having difficulty with his/her health and his/her family. After completion of the dialogue and scoring of the PICM-CAG, the case manager often shares a "scored" printout of the health complexity grid to ensure that his/her impressions of strengths, risk, and need are consistent with the way the child/youth having health difficulties and the family understand the situation. Review of the scored grid often leads to scoring adjustments and then a mutually agreed-upon course of action designed to help the child/youth regain health and function. Importantly, the PICM-CAG is forward looking and action oriented. Together, in coordination with the child/youth's clinicians, the family unit and manager take action to reclaim health (Table A11.1).

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

Table A11.1 PICM-CAG scoring sheet



Date	HEALTH RISKS AND HEALTH NEEDS					
Name	HISTORICAL		CURRENT STATE		VULNERABILITY	
Total Score =	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity (HB1)		Symptom Severity /Impairment (CB1)		Complications and Life Threat (VB)	
	Diagnostic Dilemma (HB2)		Diagnostic/Therapeutic Challenge (CB2)			
Psychological Domain	Barriers to Coping (HP1)		Treatment Adherence (CP1)		Learning and/or Mental Health Threat (VP)	
	Mental Health History (HP2)		Mental Health Symptoms (CP2)			
	Cognitive Development (HP3)					
	Adverse Developmental Events (HP3)					
Social Domain	School Functioning (HS1)		Residential Stability (CS1)		Family/ School/ Social System Vulnerability (VS)	
	Family and Social Relationships (HS2)		Child/Youth Support (CS2)			
	Caregiver/Parent Health and Function (HS3)		Caregiver/Family Support (CS3)			
			School and Community Participation (CS4)			
Health System Domain	Access to Care (HHS1)		Getting Needed Services (CHS1)		Health System Impediments (VHS)	
	Treatment Experience (HHS2)		Coordination of Care (CHS2)			

Scoring: **0 = no vulnerability or need to act (green 🟩)**
1 = mild vulnerability & need for monitoring or prevention (yellow 🟨)
2 = moderate vulnerability & need for action or development of intervention plan (orange 🟧)
3 = severe vulnerability & need for immediate action or immediate intervention plan (red 🟥)

Biological Domain Items

HB1: physical illness chronicity
HB2: physical health diagnostic dilemma, prenatal exposures
CB1: physical illness symptom severity and impairment
CB2: current difficulties in diagnosis and/or treatment
VB: risk of physical complications and life threat

Psychological Domain Items

HP1: problems handling stress and/or problem solving
HP2: prior mental condition difficulties

HP3: cognitive state and capabilities
HP4: early adverse physical and mental health events
CP1: treatment non-adherence
CP2: current mental condition symptom severity
VP: risk of persistent personal barriers or poor mental condition care

Social Domain Items

HS1: attendance, achievement, and behavior at school
HS2: child/youth living environment and interactions
HS3: caregiver physical and mental health condition and function
CS1: food and housing situation
CS2: child/youth support system
CS3: caregiver/parent support system
CS4: aptitude-correlated academic and social success
VS: risk for home/school support or to supervision needs

Health System Domain Items

HHS1: health system-related access to appropriate care
HHS2: problems with doctors or the health system
CHS1: ability to and ease of getting needed services
CHS2: coordination of and transitioning to age-appropriate care
VHS: risk of persistent poor access and/or coordination of services

Appendix 12: Understanding "Complexity Assessments" for Clinicians with Children/Youth in Integrated Case Management

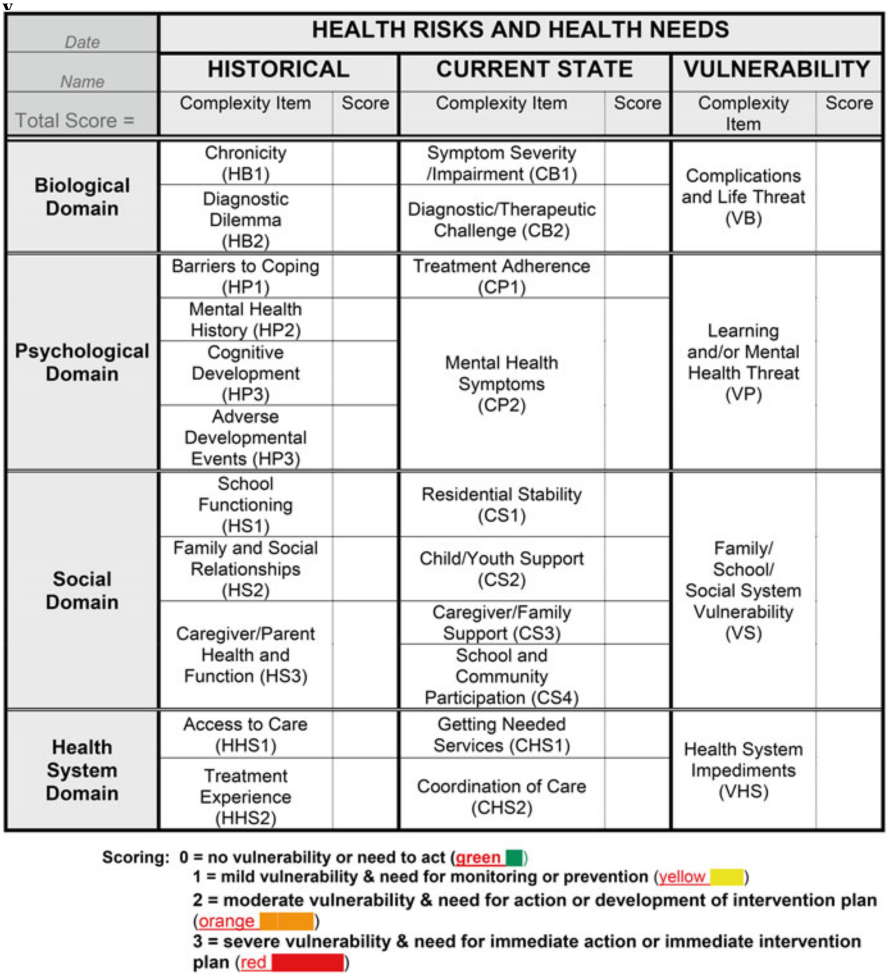
One of the greatest challenges for children/youth with health problems in the US health system is identifying the barriers and obstacles that prevent them from gaining better control of their illnesses and improving their level of health. Only part of persistent health difficulties has to do with finding the right providers and getting the right treatment. Many other factors unrelated to an illness come into play that create barriers to improvement. The Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG) was developed to uncover health-related and non-health-related life circumstances that interfere with a child/youth's ability to stabilize his/her health (see below).

The Pediatric Integrated Case Management-Complexity Assessment Grid (PICM-CAG), based on work by members of the INTERMED Foundation in Europe but designed and tested by Cartesian Solutions, Inc.™ and the Case Management Society of America (CMSA), is a complexity assessment tool now used throughout the United States by health professionals (mainly case managers), in collaboration with the child/youth and his/her family to untangle changeable circumstances that interfere with the child/youth's ability to get better. The PICM-CAG is divided into four domains, the biological, psychological, social, and health system, with 25 identified factors associated with challenges to health improvement. Each domain contains historical, current state, and vulnerability time frames with items scored based on their health concern seriousness and the immediacy of need using a zero to three color-coded scale. Much like a traffic light, red indicates a potentially significant barrier to health, while green suggests that there are no concerns. Yellow and orange suggest intermediate risk.

The PICM-CAG is scored by an integrated case manager with instruction in working with youth and families. (Table A12.1) Integrated case managers are trained in the scripted open-ended discussion with children/youth and parents and in the use of the corresponding PICM-CAG. After completion of the dialogue and the use of validated and reliable "anchored" scoring of the PICM-CAG, the case manager shares a "scored" printout of the health complexity grid, often with explanatory notes, with the child/youth's clinicians with appropriate consent. Information in the PICM-CAG often describes pertinent non-illness-related barriers to improvement about which clinicians are unaware, such as trouble finding a specialist, a disruptive living situation, limited financial resources, a comorbid mental condition, parent challenges, etc. This information opens the door to collaboration among the case manager, the child/youth, the parents, and the clinicians involved in the child/youth's care in overcoming illness- and non-illness-related factors that lead to persistent illness, illness complications, impaired function, and high health service use and cost.

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

Table A12.1 PICM-CAG scoring sheet



Date	HEALTH RISKS AND HEALTH NEEDS					
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Total Score =	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
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	Diagnostic Dilemma (HB2)		Diagnostic/Therapeutic Challenge (CB2)			
Psychological Domain	Barriers to Coping (HP1)		Treatment Adherence (CP1)		Learning and/or Mental Health Threat (VP)	
	Mental Health History (HP2)		Mental Health Symptoms (CP2)			
	Cognitive Development (HP3)					
	Adverse Developmental Events (HP3)					
Social Domain	School Functioning (HS1)		Residential Stability (CS1)		Family/ School/ Social System Vulnerability (VS)	
	Family and Social Relationships (HS2)		Child/Youth Support (CS2)			
	Caregiver/Parent Health and Function (HS3)		Caregiver/Family Support (CS3)			
			School and Community Participation (CS4)			
Health System Domain	Access to Care (HHS1)		Getting Needed Services (CHS1)		Health System Impediments (VHS)	
	Treatment Experience (HHS2)		Coordination of Care (CHS2)			

Scoring: 0 = no vulnerability or need to act (green 🟩)
1 = mild vulnerability & need for monitoring or prevention (yellow 🟨)
2 = moderate vulnerability & need for action or development of intervention plan (orange 🟧)
3 = severe vulnerability & need for immediate action or immediate intervention plan (red 🟥)

An integrated case manager is usually a nurse or social worker with specialized interdisciplinary training in complexity assessment and medical and behavioral healthcare support practices. They do not “treat” patients. Rather, they assist (partner with) the clinicians working with patients who have complicated, comorbid, and often treatment resistant health conditions. In collaboration with physicians, the child/youth and their family units, case managers help reverse disease and non-disease-related circumstances that lead to poor clinical, functional, and cost outcomes.

Biological Domain Items

HB1: physical illness chronicity
HB2: physical health diagnostic dilemma, prenatal exposures
CB1: physical illness symptom severity and impairment

CB2: current difficulties in diagnosis and/or treatment
VB: risk of physical complications and life threat

Psychological Domain Items

HP1: problems handling stress and/or problem solving
HP2: prior mental condition difficulties
HP3: cognitive state and capabilities
HP4: early adverse physical and mental health events
CP1: treatment non-adherence
CP2: current mental condition symptom severity
VP: risk of persistent personal barriers or poor mental condition care

Social Domain Items

HS1: attendance, achievement, and behavior at school
HS2: child/youth living environment and interactions
HS3: caregiver physical and mental health condition and function
CS1: food and housing situation
CS2: child/youth support system
CS3: caregiver/parent support system
CS4: aptitude-correlated academic and social success
VS: risk for home/school support or supervision needs

Health System Domain Items

HHS1: health system-related access to appropriate care
HHS2: problems with doctors or the health system
CHS1: ability to and ease of getting needed services
CHS2: coordination of and transitioning to age-appropriate care
VHS: risk of persistent poor access to and/or coordination of services

Appendix 13: Notification Letter to Patient's Clinician(s)

(Date)
Dr. *(Name)*
(Address)
Re: *Patient*
Dear Dr. *(Name)*,

(Referring Entity) has contracted with *(Case Manager/Company) to* provide integrated case management (ICM) services for your patient *(Name).* (*Referring Entity)* is committed to assisting its patients with complex health situations in achieving the best possible health outcomes. The role of the ICM manager is to be an adjunct to the care you are providing by assisting with appropriate health education, coordination of care, and support and by acting as a patient advocate. We also assist patients with what we term "non-clinical" barriers to improvement, such as finding transportation to appointments, assuring communication among providers, finding needed care services, accessing housing resources, and involving social services.

As the assigned ICM manager for *(Name of Patient)*, it is my desire to establish a collaborative relationship with you while working with *(her/him)*. We have found that by using the ICM approach (brief description attached), patients with complex health and life situations can achieve better health outcomes and are more adherent to prescribed treatment plans. Enclosed you will find a consent signed by *(Name of Patient or Parent/Guardian)* allowing me to receive protected health information from you and your clinic. I would be happy to discuss how I might be of assistance to you and *(Name of Patient)* during the next several months or to further explain my activities with your patient. You may contact me at *(Phone number).*

Please place copies of this letter and the enclosed HIPAA authorization in the patient's chart for easy reference. *Referring Entity* thanks you in advance for your consideration and I look forward to assisting you with *(Name of Patient*)'s care.

Sincerely,
(Name of ICM Manager)
Cc: file, patient

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

Appendix 14: Universal Consent Form

I want to participate in the Integrated Case Management Program provided by representatives affiliated with the (name of company, hospital, etc.). I authorize the release of my protected health information for the purposes of collaboration/consultation among my healthcare team for the development, implementation, and evaluation of an integrated case management plan of care focused upon achieving optimal outcomes and a return to a healthy productive life.

The information to be released includes the following:

☐ Physical and mental healthcare provider notes, records, reports	☐ Other
☐ Substance use disorder treatment notes	________________________________
☐ Case/disease management notes	________________________________
☐ Consultation reports	
☐ Radiology and lab reports	
☐ Other notes and reports	

This information is to be released to the following:
(Check all that apply)

(Insurance company divisions/subcontractors)	**Employer/public program subcontractors**
☐ Disease management clinicians	☐ Disability management clinicians
☐ Case management clinicians	☐ Employee assistance program
☐ Healthy start clinicians	☐ Health risk management clinicians
☐ Nurse line	☐ Safety
Workers compensation	**Health providers**
☐ Comprehensive managed care	☐ Clinicians providing my care

I have been informed that:

☐ Information will be disclosed/requested only when necessary for the collaboration/consultation relative to healthcare and management services.
☐ I have a right to request a copy of any information disclosed.
☐ I am not legally obligated to provide this informed authorization; however, declining to do so may hinder my healthcare team members from providing complete services for me.
☐ I understand that the Integrated Case Management Program is voluntary and I may revoke this consent in writing at any time. This release form expires automatically 1 year after signing or upon termination of health services related to (name of company, hospital, etc.).
☐ I understand that treatment and payment may not be conditioned on this authorization.

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

☐ Information disclosed may be subject to re-disclosure by recipient and may no longer be protected by federal privacy laws.

☐ If I so choose, I may designate a representative for my healthcare team to work with on my behalf. I designate ______________________ *(print)* as my representative ________________________ *(relationship to client)*.

Patient's printed first and last name ____________________________________

Patient signature ____

Date____________

Date of birth ____

Health plan, hospital, or clinic identification number ______________________

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Appendix 15: Adult ICM-CAG Item Anchor Point Actions

Each of the Integrated Case Management-Complexity Assessment Grid (ICM-CAG) anchor points is designed to inform actions by ICM managers. The following is a list of actions that could be considered when a patient has a specific score on an item in the ICM-CAG. *The actions listed below are not considered exhaustive but rather representative of the types of action that an ICM manager should consider on behalf of a patient.* Actions by ICM managers should be taken in an attempt to correct barriers to health improvement, the primary goal in using the ICM-CAG, and the central aim when working with patients with health complexity.

In this Appendix, actions are delineated for each score on each item in the ICM-CAG. It should be noted that items within the grid are also often connected with each other. As a result, the ICM manager should not just consider the actions associated with an item score as he/she creates a care plan to assist a patient but should also consider how the item score relates to other items in the grid. For instance, a patient may change doctors often due to poor trust of doctors and/or the health industry (a score of "2" on HHS2). As a result, the patient may be non-adherent to treatment (a score of "3" on CP1). Since poor trust by such a patient is connected with non-adherence, actions on both items should be considered in tandem, e.g., discuss barriers related to trust with the patient and his/her doctors (HHS2) and use education and motivational interviewing techniques to improve the patient's adherence (CP1).

Instructions to ICM Managers:

1. The ICM-CAG assesses complexity (Table A15.1). Each item score (also called a "cell score") on the ICM-CAG suggests actions by the ICM manager working on behalf of the patient and/or the patient on his/her own behalf within a specified time frame. A score of "1" (yellow) suggests the need for monitoring/prevention; "2" (orange) to do something soon, i.e., intervene or develop a plan; and "3" (red) for immediate intervention or plan implementation. To the extent possible, activities by the ICM manager and the patient should be a part of a patient-manager developed care plan with goals and objectives. These care plans must then be communicated to the patient's practitioners with a request for their active participation.
2. *All care plans will include education of the patient and, when appropriate, significant others about the patient's illnesses, the interaction of illnesses, and treatments*. Often the ICM manager will provide information about diseases or help the patient formulate questions for his/her physicians. Physicians and other treating professionals should serve as the primary arbiter of information and treatment when possible. Thus, communication between the ICM manager and the patient's clinicians is also important.

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

Table A15.1 Integrated Case Management-Complexity Assessment Grid (ICM-CAG)

ID number _______________ **Age** _____________ **Gender** ______

Date	**Health risks and health needs**					
Name	**Historical**		**Current state**		**Vulnerability**	
Total score=	Complexity item	Score	Complexity item	Score	Complexity item	Score
Biological Domain	Chronicity (HB1)		Symptom severity/impairment (CB1)		Complications and life threat (VB)	
	Diagnostic dilemma (HB2)		Diagnostic/therapeutic challenge (CB2)			
Psychological Domain	Coping with stress (HP1)		Treatment adherence (CP1)		Mental health threat (VP)	
	Mental health history (HP2)		Mental health symptoms (CP2)			
Social Domain	Job and leisure (HS1)		Residential stability (CS1)		Social vulnerability (VS)	
	Relationships (HS2)		Social support (CS2)			
Health System Domain	Access to care (HHS1)		Getting needed services (CHS1)		Health system impediments (VHS)	
	Treatment experience (HHS2)		Coordination of care (CHS2)			
Comments	(Enter pertinent information about the reason for the score of each complexity item here, e.g., poor patient adherence, death in family with stress to patient, non-evidence-based treatment of migraine, etc. When using CMSA ICM software, there are windows available to capture notes by ICM managers.)					

3. ICM managers do not treat patients; they provide ancillary support that is likely to improve outcomes, break down barriers, and assist with health system navigation. Since the patient's clinicians are the focal point of effective treatment, it is important for ICM managers to form alliances with the patient's treatment team as they work with the patient. Sending an introductory note (Appendix 13) and an ICM descriptive flier (Appendix 17) to practitioners can facilitate this alliance. ICM managers should also point out that the intended duration of their involvement with the patient is usually measured in weeks to months.
4. Many of the cells on the ICM-CAG are associated with barriers to treatment adherence. Though Treatment adherence (CP1) captures the fact that non-adherence is a problem, it does not uncover the reason, several of which are listed in Appendix 18. Since non-adherence is associated with worse clinical outcome, the ICM manager and patient should work together in all domains and in all cells to reverse barriers that contribute to treatment non-adherence.
5. No action is required for items in which a score of “0” is made.

Biological Domain

Actions related to items in the biological domain are intended to address barriers to improvement for physical conditions and their symptoms (Table A15.2). In all situations, except for anchor point “3” on item CB2 “Diagnostic/therapeutic challenge,” these items refer specifically to taking action related to the physical health issues themselves. In fact, it is this activity that forms the core of traditional case management, which focuses on correction of inconsistent adherence to evidence-based treatments, on improving provider communication, and in establishing collaborative care for physical illness.

The CB2 anchor point score “3” includes nonphysical factors as a cause of physical symptoms, such as when a psychiatrically ill patient presents with somatic preoccupation of a physical disorder in the absence of objective medical findings, or for treatment challenges, such as having no interpreters to inform a non-native-speaking patient about illness findings and treatment. For CB2 anchor point score “3,” ICM manager actions necessarily include those that will overcome both physical and nonphysical illness-related barriers to improvement, such as treating a depression or accessing telephonic interpreter services.

In the current healthcare environment, few general medical clinicians consider addressing issues that seem unrelated to physical illness. Even in patients with what would be considered “subsyndromal” Mental health symptoms (CP2), minor mental health symptoms can and do contribute to poor physical health outcomes and can be the tipping point from persistent biological symptoms and treatment nonresponse to health stabilization and reduced impairment. In patients who score “3” on CB2 even when CP2 or other nonbiological items are scored “1” or “2,” i.e., at a lower level, these other areas of concern that are exacerbating the physical illness burden would need to be addressed at an earlier point in the ICM process.

Table A15.2 Biological domain

HB1	Chronicity
1	**More than 3 months of physical dysfunction or several periods of less than 3 months**: review patient's understanding of persistent dysfunction; observe to see if condition turns chronic with physical limitations; assure primary care or specialist follow-up
2	**A chronic disease**: review patient's understanding of chronic illness and treatment; simplify and assist with systematic approach to illness control; assure active involvement and collaboration by primary care physician and medical specialists; confirm assessments of patient symptoms and/or clinical outcomes are measured over time, e.g., diabetic neuropathy, HbA1c, etc.; enable unfettered access to physical health and mental health records by all treating clinicians
3	**Several chronic diseases**: immediately perform actions under #2; detailed review of understanding of illnesses and treatments; ICM Medical Director discusses follow-up needs with primary care provider
HB2	**Diagnostic dilemma**
1	**Easy diagnoses**: observe for changes in clinical status
2	**Diagnostic dilemma with single or multiple conditions solved**: bring in ICM Medical Director to review if it is outside the case manager's level of expertise to get a "big picture" assessment of the accuracy of diagnoses and treatment; review diagnoses, interventions, and treatments for fidelity with the patient's course and improvement with treatment; assess attitude of patient about diagnosis and work-ups and educate about process with ICM Medical Director help; facilitate doctor-to-doctor communication; assure assessment for concurrent mental conditions has been done and treatment is being given; diplomatically communicate discordant understanding between patient and clinicians; discuss ways that case management can assist her/him in improving outcomes
3	**Diagnostic dilemma not solved despite considerable diagnostic efforts**: immediately perform actions under #2; case manager serves as a link among physicians caring for patient, the ICM Medical Director, and the patient to maintain communication, collaboration, and outcome orientation; seek patient's input about unresolved problems
CB1	**Symptom severity/impairment**
1	**Mild symptoms; no functional impairment**: observe; review for less invasive, less expensive treatment options
2	**Moderate to severe symptoms; impairment present**: ensure that treatment and follow-up provided are coordinated through efforts of primary care and specialty medical physicians; activate ongoing assessment of patient symptoms over time, e.g., labs, X-rays, complications, etc.; enable unfettered access to physical health and mental condition records by all treating clinicians; evaluate patient's understanding of illness and impairment and educate if appropriate; delineate impairments and ensure rehabilitation and support measures; maximize adherence
3	**Severe symptoms leading to inability to perform activities of daily living**: immediately perform actions under #1 and #2; find out what works best for the patient; assist with ongoing communication among practitioners; enlist family assistance when available; consider alternative treatment settings, living arrangements, rehabilitation services; augment home care availability; engage ICM Medical Director assistance and suggestions
CB2	**Diagnostic/therapeutic challenge**
1	**Quick diagnoses expected with easy treatments**: assure coordination of services

(continued)

Table A15.2 (continued)

2	**Difficult to diagnose and treat; physical cause/origin and treatment expected**: scrupulously ensure that patient is following through on evaluations and treatments; make sure that clinicians know the outcomes of exams and tests done by colleagues; assist in measuring outcomes of interventions; maintain communications with and between patient and clinical team, e.g., using IM-CAG results; have ICM Medical Director review case for additional ideas and talk to clinicians; assist patient in getting answers to questions about health from practitioners; discuss setting up a case conference among clinicians with patient and ICM Medical Director
3	**Difficult to diagnose and treat; psychological, social, economic issues cloud picture**: immediately perform actions under #2; make sure that clinicians know about mental conditions, social, and/or health system factors that may be playing a role; confirm that the patient is being seen in a timely fashion by appropriate practitioners; have ICM Medical Director talk with patient's clinician about expanded differential and potential additional treatments; facilitate mental health referral through primary care physicians; discuss role of nonphysical health factors in medical symptom persistence and treatment resistance with patient; ensure that assessment for concurrent mental conditions has been done and that treatment is being given
VB	**Complications and life threat**
1	**Mild risk of premature physical complications or limitations in activities of daily living**: ensure adherence to treatment and troubleshoot barriers that crop up; consider transfer back to standard care
2	**Moderate risk of premature physical complications or permanent and/or substantial limitations in activities of daily living**: address issues causing non-adherence to treatment; establish continuity of physical and mental condition services; stabilize communication and collaboration among providers and patient; establish methodology to follow clinically relevant outcomes with patient and clinicians, e.g., HbA1c, visits to ER, missed work/disability, etc.; monitor with ICM Medical Director through case conferences; consider intermittent long-term contact with patient
3	**Severe risk of physical complications and serious functional deficits and/or dying**: immediately perform actions under #2; ensure physical health condition assessment and treatment follow through; intermittent long-term contact with patient until risks change; assist with hospice and long-term care; discuss exploring alternative providers with patient after discussion with ICM Medical Director

Psychological Domain

Actions related to items in the psychological domain are intended to address barriers to improvement related to health behaviors, coping styles, prior mental conditions, and current psychiatric symptoms (Table A15.3).

Social Domain

Actions related to items in the social domain are intended to address barriers to improvement related to difficulties in forming and/or maintaining relationships, establishing social connectedness and support, living arrangements, function in a community, or success in the job setting and with coworkers (Table A15.4).

Table A15.3 Psychological domain

HP1	Coping with stress
1	**Restricted coping skills**: provide active listening and patient education; consider referral for counseling on coping mechanisms or training in stress reduction techniques (1–3 sessions with a counselor)
2	**Impaired coping skills with frequent conflicts and/or substance abuse**: identify support for stressful situations; encourage referral for counseling on coping mechanisms; enable training in stress reduction and conflict resolution techniques (1–5 sessions with a counselor); involve employee assistance program (EAP) to address worksite-related stressors; suggest adjustments in living/work location/activities; endorse screening and brief intervention for alcohol abuse (SBIRT); consider talking with primary care physician about substance use and potential need for chemical dependence referral
3	**Minimal coping skills with dangerous behaviors**: immediately perform actions under #2; assure coping and stress management training or crisis management for patient in collaboration with providers; encourage providers to refer for behavioral health assessment and intervention, e.g., cognitive behavioral therapy (CBT), dialectic behavior therapy (DBT), or medication
HP2	**Behavioral health history**
1	**Behavioral conditions resolved or without effect on life activities**: ensure regular primary care screens for mental conditions with intervention; check for access to support from mental health professionals
2	**Behavioral conditions that interfered with life activities or required treatment**: insure understanding of potential for recurrence of mental health conditions by patient in lay language; link potential for medical and physical condition interactions, if indicated; facilitate psychiatrist and mental health “team” (psychologists, social workers, nurses, substance use disorder and other counselors, etc.) access and support when conditions destabilize; confirm maintenance and continuation treatment provided by primary care professionals (medical home) with mental health specialist assistance; ensure ongoing assessment of patient symptoms over time, e.g., PHQ-9, GAD-7, etc.; activate communication and unfettered access to physical and mental health records by all treating clinicians
3	**Psychiatric admissions and/or persistent effects on daily function**: immediately perform actions under #2; encourage primary involvement and treatment by a mental health team for mental conditions working in close collaboration with primary care physicians who care for concurrent physical illness; facilitate involvement by colocated physical and mental health clinicians who actively interact in an integrated clinic setting
CP1	**Treatment adherence**
1	**Ambivalence**: educate patient/family about illnesses; initiate discussions with patient about resistant behaviors using motivational interviewing and problem solving techniques to reduce resistance; explore reason for poor adherence and address (Appendix 5-4); inform providers of adherence problems and work with them to consider alternative interventions, if needed
2	**Resistance, hostility, indifference**: review need for other health professional or clinic to provide care with case manager’s Medical Director; actively explore and attempt to reverse other sources of resistance, e.g., family member’s negativism, religious objections, cultural influences, relationships with treating physician
3	**Active resistance**: immediately perform actions under #1 and #2; work with treating clinicians in considering and instituting alternative intervention; work with ICM Medical Director to find “second-opinion” practitioners; consider discontinuation of ICM for irresolvable and pervasive resistance

(continued)

Table A15.3 (continued)

CP2	Mental health symptoms
1	**Mild mental health symptoms**: ensure primary care treatment with access to support from mental health professionals; facilitate unfettered access to physical and mental health records by all treating clinicians
2	**Moderate mental health symptoms**: ensure that acute, maintenance, and continuation treatment is being provided by primary care physicians with mental health support and backup; facilitate primary maintenance and continuation treatment provided by primary care physician (medical home) with mental health specialist assistance, i.e., a psychiatrist and mental health "team" (psychologists, social workers, nurses, substance abuse counselors, etc.) when condition destabilizes, becomes complicated, and/or demonstrates treatment resistance; assist with instituting symptom documentation recording system, such as PHQ-9, GAD-7, etc.; assure crisis plan is available
3	**Severe psychiatric symptoms and/or behavioral disturbances**: perform actions under #1 and #2; support active and aggressive treatment for mental conditions by a mental health team working in close collaboration with primary care physicians, who care for concurrent physical illness; facilitate the use of geographically colocated physical and mental health personnel to ease coordination of treatment; confirm persistent symptom documentation recording system, such as PHQ-9, GAD-7, etc.; ensure physical and mental health treatment adherence
VP	**Behavioral health threat**
1	**Mild risk of worsening mental health symptoms**: ensure access to support; ensure/encourage continuous follow-up care with intermittent mental health assessments, when appropriate; suggest booster sessions for coping and stress reduction, when needed; consider transfer back to standard care
2	**Moderate risk of worsening mental health symptoms**: set up maintenance and continuity program which involves the treating primary care physicians, clinical nurse specialists, and mental health specialists; assist in establishing a regular symptom documentation system, such as PHQ-9, GAD-7, etc.; facilitate guideline development for mental health team involvement with patient in the primary care clinic to assist with treatment adjustments (best provided in an integrated primary care clinic); address adherence and patient-provider relationship issues; involve caregivers in medical and behavioral health accountability after informed consent obtained; institute verbal, paper, and electronic communication capabilities for all clinical professionals working with the patient
3	**Severe and persistent risk of psychiatric disorder with frequent health service use**: immediately perform actions under #1 and #2; confirm care continuity with both general medical and mental health specialists; work with the patient's clinicians in establishing collaborative clinical goals with the patient; consider long-term involvement

Health System Domain

Actions related to items in the health system domain are intended to address barriers to improvement caused by difficulties in accessing services, trusting and working with clinicians, getting to and coordinating appointments, and/or coordinating services among the patient's providers and clinic settings (Table A15.5).

There is a tendency for those working in different countries to think that the actions related to the items below do not fit their health system. For instance, in the

Table A15.4 Social domain

HS1	Job and leisure
1	**A job; few leisure activities**: explore interests, hobbies with the patient and encourage rekindling activity
2	**At least 6 months unemployed (but employable); leisure activities**: assist patient in getting disability assistance, exploring schooling opportunities, etc.; educate patient on how to get public assistance for living and healthcare needs; set up with social service, job finding services, vocational rehabilitation, or other community resources if a new job is a possibility; follow-up; continue encouraging patient initiated activities
3	**At least 6 months unemployed (but employable); few leisure activities**: immediately perform actions under #1 and #2; explore impact of no job and few activities on health access; explore community resources with patient
HS2	**Relationships**
1	**Mild social dysfunction; interpersonal problems**: observe interpersonal difficulties during patient interviews and adjust recommendations to accommodate for limitations, i.e., introversion, family discord, etc.
2	**Moderate social dysfunction**: encourage social skills training (1–6 sessions with a counselor); foster involvement of family, significant others, or social service; assess impact of social problems on patient's health issues, address if present; explore alternative socialization opportunities
3	**Severe social dysfunction**: immediately perform actions under #1 and #2; encourage behavioral health assessment and treatment if appropriate and/or needed in collaboration with primary care physician
CS1	**Residential stability**
1	**Stable housing situation with support of others**: make sure vulnerability needs match support
2	**Unstable housing**: initiate contact with social service or other community resources to look into housing options; get assistance to help correct the cause of the residential instability, such as financial limitations, family conflict, natural disaster, etc.; use knowledge of community resources to "push the system"
3	**Unsafe or transient housing**: immediately connect the patient with social service to find a shelter, such as for battered women or other suitable housing; perform actions under #2
CS2	**Social support**
1	**Assistance generally available but possible delays**: initiate assistance mechanism
2	**Limited assistance readily available**: talk with patient's available personal contacts about what they can do along with the patient; set up with social services or other agency to assist patient find needed community resources; follow up on recommendation outcome; use knowledge of community resources to "push the system"; get ideas about options from other health professionals familiar with patient's social setting
3	**No assistance readily available**: immediately perform actions under #2; consider helping to transfer to a location with a higher level of care, e.g., group home, assisted living facility
VS	**Social vulnerability**
1	**Some health assistance needs**: see if current location can accommodate potential need; consider transfer back to standard care

(continued)

Table A15.4 (continued)

2	**Risk of need for alteration in social situation in the foreseeable future**: continue to work with family; assist, engage, and push social service to find resources and make ready the procedures for help and/or placement; follow up on outcomes of recommendations; use knowledge of community resources to "push the system"
3	**Risk of need for alteration in social situation now**: immediately perform actions under #2; attempt to set up long-term living arrangements

Table A15.5 Health system domain

HHS1	Access to care
1	**Some limitation in accessing care**: assist in identifying culturally sensitive willing providers, interpretation services, and assuring timely appointments
2	**Difficulties in accessing care**: work with patient in finding health insurance, interpretation services, and willing providers; assure timely appointments (use conference calls if necessary); advocate for "flexing benefits" (with health plan) when possible to get appropriate care (go up the supervisory ladder); push the system to shorten the wait list priority; connect physical and mental health financial/administrative support to insure access to services; assist with appeals of inappropriately denied care (use case management Medical Director, if necessary)
3	**No adequate access to care**: immediately perform actions under #2; enlist community agencies to assist in finding insurance product, translators, providers, and/or general assistance clinics; assist with post-emergency room and post-hospitalization follow-up treatment and support locations; advocate for patient
HHS2	**Treatment experience**
1	**Negative experience with healthcare providers**: Assess for adherence to assessment and treatment recommendations; periodically ask about current relationship with clinical practitioners/staff; help patient to ask questions of or to challenge practitioners
2	**Changes doctors more than once due to dissatisfaction; multiple providers**: assess types of conflicts with practitioner; adjudicate conflict when possible (directly or indirectly); assure treatment adherence; foster communication between patient and practitioner about conflicts; assist patient in getting to a different provider if needed, where outcomes would be better; involve ICM Medical Director for assistance
3	**Repeated major conflicts with doctors, frequent ER visits, or involuntary admissions**: immediately perform actions under #2; assist in finding someone to work with patient on conflict resolution techniques; talk with the ICM Medical Director about assisting patient to find another professional or location of care; look for personality or chemical dependence issues contributing to conflict; look at insurance alternatives with patient

(continued)

Table A15.5 (continued)

CHS1	Getting needed services
1	**Some difficulties in getting to appointments or needed services**: review correlation of disorders with treatment being given
2	**Routine difficulties in coordinating and/or getting to appointments or needed services**: assess for coordinated care locations and practitioner availability; coordinate appointments with patient's transportation capabilities; assist with finding money for medications, equipment, and needed services; check for appointment flexibility in current clinic system; work with patient's clinicians to help find needed medical and/or mental health specialists (discuss with ICM Medical Director to set up appointments, if needed [out of region/network included]); explore the use of telemedicine for care delivery; establish transportation services for appointments; review difficulties with primary care physician (medical home)
3	**Inability to coordinate and/or get to appointments or needed services**: immediately perform actions under #2; work with primary care (or specialty) establish medical home; work with primary care (or specialty) physician (medical home) to coordinate appointments, e.g., diabetologist and psychiatrist
CHS2	**Coordination of care**
1	**Limited practitioner communication and coordination of care**: encourage record sharing and communication among clinicians, including mental health and complementary medicine; open links for important communication establish patient in organized patient-centered medical home with single primary care clinician
2	**Poor communication and coordination of care among practitioners**: determine and augment communication links between physical and mental health practitioners; ensure note sharing, preferably with a common record system, among clinicians working with patient; ensure information transfer during care transitions, e.g., inpatient to outpatient care, primary care to specialist; insure medication reconciliation and minimize prescription duplication/overuse; help patient get same-day appointments for different problems; investigate availability of and transfer to integrated clinics; identify reasons for missed appointments to overcome barriers
3	**No communication and coordination of care among practitioners** immediately perform actions under #1 and #2; serve as link for patient with various practitioners, i.e., with informed consent; obtain and fax notes for distribution to various clinic sites; talk with treating practitioners on behalf of patient but also educate patient on how to do so; create alternatives to emergency room use; enlist assistance from ICM Medical Director to try to establish a medical home
VHS	**Health system impediments**
1	**Mild risk of impediments to care**: assure insurance benefits cover health needs; assist in maintaining coverage; review practitioner communication procedures; consider transfer back to standard care
2	**Moderate risk of impediments to care:** work with patient, practitioner providing medical home, social services, and community agencies to establish the best health setup possible in the region; assist in finding insurance products, needed providers, and communicating clinic systems; insure communication and care coordination among physical and mental health clinicians; consider setting up a physical and mental health clinicians case conference

(continued)

Table A15.5 (continued)

3	**Severe risk of impediments to care**: immediately perform actions under #2; help patient find and establish a medical home that will persist over time; attempt to enlist assistance of community-based case manager (public health); attempt to enlist assistance of community-based case manager (public health); assure insurance benefits cover health needs; assist in maintaining coverage; review and assist with practitioner communication procedures

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US system, lack of insurance coverage has been a major barrier to care access but much less of an issue in countries with national health services with universal participation. Thus, those living in other countries with universal coverage may feel that Access to care (HHS1) is not a significant issue. Of course, this is not the case since geographic accessibility (rural settings), language, or cultural/religious issues (no female physicians to examine female patients due to religious custom) may hamper access at the system level. For each item in the health system domain, case managers are instructed to systematically apply actions pertinent to their health system and service location.

Health system domain actions should be customized to the health-related business practices used in each country so that barriers to care can be systematically corrected.

Appendix 16: Understanding "Complexity Assessments" for Persons Entering Integrated Case Management

One of the greatest challenges for people with health problems in our health system is identifying the barriers that prevent them from gaining better control of their illnesses and improving their level of health. Only part of persistent health difficulties has to do with finding the right providers and getting the right treatment. Many other factors not related to an illness come into play that create barriers to improvement. The Integrated Case Management-Complexity Assessment Grid (ICM-CAG) was developed to uncover health-related and non-health-related life circumstances that interfere with an individual's ability to stabilize his/her health (Table A16.1).

The ICM-CAG, designed and originally tested by members of the INTERMED Foundation in Europe, is a complexity assessment tool now used throughout the world by health professionals (mainly care managers), in collaboration with their patients, to untangle changeable circumstances that interfere with their ability to get better. It is divided into four domains, the biological, psychological, social, and health system, with 20 identified factors associated with challenges to health improvement. Each domain contains historical, current state, and vulnerability time frames with items scored according to the seriousness of the health concern and immediacy of need using a zero to three color-coded scale. Much like a traffic light, red indicates a potentially significant barrier to health, while green suggests that there are no concerns. Yellow and orange suggest intermediate risk.

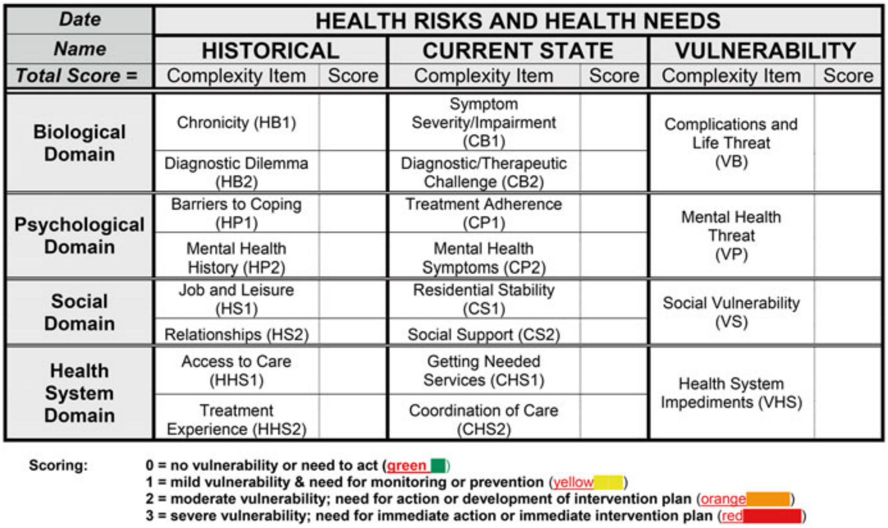
The ICM-CAG is scored by a specially trained health professional after a discussion with a person having difficulty with his/her health. After completion of the dialogue and scoring of the ICM-CAG, the care manager often shares a "scored" printout of the health complexity grid to ensure that his/her impressions of risk and need are consistent with the way the person having health difficulties understands his/her dilemma. Review of the scored grid often leads to scoring adjustments and then a mutually agreed-upon course of action designed to help an individual regain health and function. Importantly, the ICM-CAG is forward looking and action oriented. Together, in coordination with a person's clinicians, the individual and manager take action to reclaim health.

Biological Domain Items

HB1: physical illness chronicity
HB2: problems in diagnosing physical illness
CB1: physical illness symptom severity and impairment
CB2: challenges diagnostic and therapeutic effect
VB: risk of physical complications and life threat

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

Table A16.1 ICM-CAG Scoring Sheet



Date	HEALTH RISKS AND HEALTH NEEDS					
Name	HISTORICAL		CURRENT STATE		VULNERABILITY	
Total Score =	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity (HB1)		Symptom Severity/Impairment (CB1)		Complications and Life Threat (VB)	
	Diagnostic Dilemma (HB2)		Diagnostic/Therapeutic Challenge (CB2)			
Psychological Domain	Barriers to Coping (HP1)		Treatment Adherence (CP1)		Mental Health Threat (VP)	
	Mental Health History (HP2)		Mental Health Symptoms (CP2)			
Social Domain	Job and Leisure (HS1)		Residential Stability (CS1)		Social Vulnerability (VS)	
	Relationships (HS2)		Social Support (CS2)			
Health System Domain	Access to Care (HHS1)		Getting Needed Services (CHS1)		Health System Impediments (VHS)	
	Treatment Experience (HHS2)		Coordination of Care (CHS2)			

Scoring:
0 = no vulnerability or need to act (green 🟩)
1 = mild vulnerability & need for monitoring or prevention (yellow 🟨)
2 = moderate vulnerability; need for action or development of intervention plan (orange 🟧)
3 = severe vulnerability; need for immediate action or immediate intervention plan (red 🟥)

Psychological Domain Items

HP1: psychological coping with stress
HP2: history of psychiatric problems or treatment
CP1: treatment non-adherence
CP2: psychiatric symptom severity
VP: risk of persistent personal barriers or poor mental condition care

Social Domain Items

HS1: job and leisure problems
HS2: ineffective relationship
CS1: residential instability
CS2: poor social support system
VS: risk for additional home support or supervision needs

Health System Domain Items

HHS1: health system causes for poor access to appropriate care
HHS2: problems with doctors or the health system
CHS1: ability to and ease of getting needed services
CHS2: logistical challenge in getting coordinated care
VHS: risk of persistent poor access to and/or coordination of services

Appendix 17: Understanding “Complexity Assessments” for Clinicians with Patients in Integrated Case Management

One of the greatest challenges for patients in our health system is identifying the barriers that prevent them from gaining better control of their health. Only part of persistent health difficulties has to do with finding the right providers and getting the right treatment. Many other factors not related to an illness come into play that create barriers to improvement. The Integrated Case Management-Complexity Assessment Grid (ICM-CAG) was developed to uncover health-related and non-health-related life circumstances that interfere with a patient’s ability to stabilize his/her health (Table A17.1).

The ICM-CAG, designed and originally tested by members of the INTERMED Foundation in Europe, is a complexity assessment tool now used throughout the world by health professionals (mainly care managers), in collaboration with their patients, to untangle changeable circumstances that interfere with a patient’s ability to get better. It is divided into four domains, the biological, psychological, social, and health system, with 20 identified factors associated with high risk for poor health improvement. Each domain contains historical, current state, and vulnerability time frames with items scored based on the seriousness of the health concern and the immediacy of need using a zero to three color-coded scale. Much like a traffic light, red indicates a potentially significant barrier to health, while green suggests that there are no concerns. Yellow and orange suggest intermediate risk.

The ICM-CAG is scored by a specially trained health professional, an integrated care/case manager,* trained in its interdisciplinary use and is based on a scripted open-ended discussion with a patient. After completion of the dialogue and the use of validated and reliable “anchored” scoring of the ICM-CAG, the care manager shares a “scored” printout of the health complexity grid, often with explanatory notes, with the patient’s clinicians with appropriate consent. Information in the ICM-CAG often describes pertinent non-illness-related barriers to improvement about which clinicians are unaware, such as trouble finding a specialist, a disruptive living situation, limited financial resources, a comorbid mental health condition, etc. This information opens the door to collaboration among the care manager, the patient, and the patient’s clinicians in overcoming illness- and non-illness-related factors that lead to persistent illness, illness complications, impaired function, and high health service use and cost.

* An integrated care/case manager is usually a nurse or social worker with specialized interdisciplinary training in complexity assessment and medical and mental healthcare support practices. They do not “treat” patients. Rather, they assist (partner with) the clinicians working with patients with complicated, comorbid, and often treatment resistant health conditions. In collaboration with physicians and

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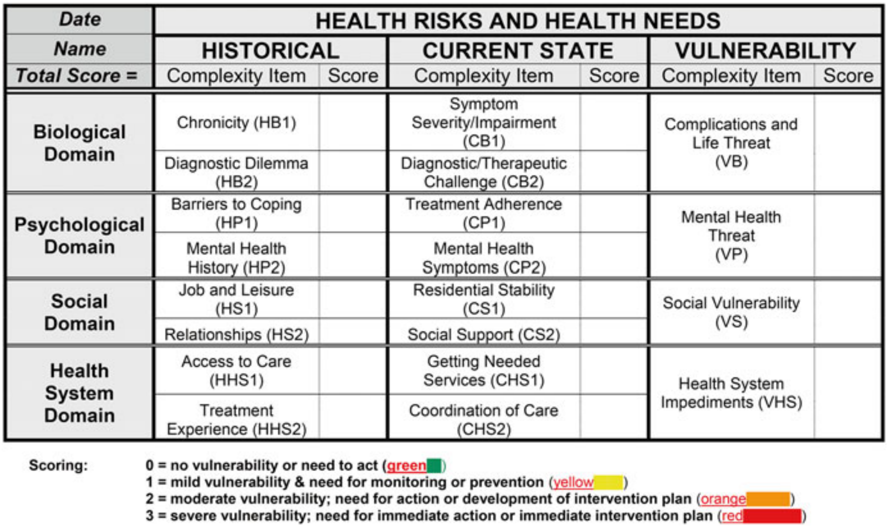
Table A17.1 ICM-CAG scoring sheet



Date	**HEALTH RISKS AND HEALTH NEEDS**					
Name	**HISTORICAL**		**CURRENT STATE**		**VULNERABILITY**	
Total Score =	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity (HB1)		Symptom Severity/Impairment (CB1)		Complications and Life Threat (VB)	
	Diagnostic Dilemma (HB2)		Diagnostic/Therapeutic Challenge (CB2)			
Psychological Domain	Barriers to Coping (HP1)		Treatment Adherence (CP1)		Mental Health Threat (VP)	
	Mental Health History (HP2)		Mental Health Symptoms (CP2)			
Social Domain	Job and Leisure (HS1)		Residential Stability (CS1)		Social Vulnerability (VS)	
	Relationships (HS2)		Social Support (CS2)			
Health System Domain	Access to Care (HHS1)		Getting Needed Services (CHS1)		Health System Impediments (VHS)	
	Treatment Experience (HHS2)		Coordination of Care (CHS2)			

Scoring:
0 = no vulnerability or need to act (green🟩)
1 = mild vulnerability & need for monitoring or prevention (yellow🟨)
2 = moderate vulnerability; need for action or development of intervention plan (orange🟧)
3 = severe vulnerability; need for immediate action or immediate intervention plan (red🟥)

patients, case managers help reverse disease and non-disease-related circumstances that lead to poor clinical, functional, and cost outcomes.

Biological Domain Items

HB1: physical illness chronicity
HB2: problems in diagnosing physical illness
CB1: physical illness symptom severity and impairment
CB2: challenges diagnostic and therapeutic effect
VB: risk of physical complications and life threat

Psychological Domain Items

HP1: psychological coping with stress
HP2: history of psychiatric problems or treatment
CP1: treatment non-adherence
CP2: psychiatric symptom severity
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Social Domain Items

HS1: job and leisure problems
HS2: ineffective relationship
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CS2: poor social support system
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Health System Domain Items

HHS1: health system causes for poor access to appropriate care
HHS2: problems with doctors or the health system
CHS1: ability to and ease of getting needed services
CHS2: logistical challenge in getting coordinated care
VHS: risk of persistent poor access to and/or coordination of services

Appendix 18: Barriers to Adherence

- **Language**, e.g., non-English speaking only
- **Culture**, e.g., belief in alternative treatment practices
- **Religion**, e.g., scientologist negation of psychiatric illness
- **Health and treatment orientation**, e.g., non-belief in the allopathic approach to care (Western medicine)
- **Education**, e.g., limited health literacy
- **Cognitive impairment**, e.g., secondary to medical or behavioral illness
- **Technology**, e.g., no telephone
- **Geography**, e.g., no transportation and remote living
- **Coverage issues**, e.g., benefit exclusions
- **Dependency issues**, e.g., caregiver/guardian refusal of care
- **Parental consent**, e.g., parent doesn't agree with treatment approach
- **Provider**, e.g., no providers in patient's location or needed specialty
- **Finances**, e.g., no money for co-payments
- **Interest in change**, e.g., disability-related disincentive
- **Social**, e.g., protective resistant partner/spouse, family sees no need for treatment
- **Psychological**, e.g., active paranoia about healthcare system
- **Stigma of having a mental illness and seeking treatment**, e.g., job in jeopardy if engaged in mental healthcare
- **Prior adverse healthcare experience**, e.g., told "It's all in your head."
- **Denial of illness**, e.g., personal view of just having a "tough time" rather than depression
- **Misinformation**, e.g., vaccines causing autism
- **Physical barriers**, e.g., significant physical impairments preventing ability to get services
- **Safety**, e.g., unsafe neighborhood, especially at night, such as in a ghetto or war zone

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Appendix 19: Adult Patient-Centered ICM Performance Template (PCIP)

Name and case #:________________________

Date:___________________________________

Measure	**Baseline**	**Follow-up assessments**		
Time period	*Initial (date)*	*First (date)*	*Second (date)*	*Third (date)*
Clinical measure Related to personal goal				
Functional measure Related to personal goal				
Health-related quality of life				
Patient satisfaction				
ICM-CAG score				
Clinical measure Health professional goal				
Clinical measure Health professional goal				
Functional measure Health professional goal				
Functional measure Health professional goal				
Economic measure Health professional goal				

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Appendix 20: Core ICM Principles

- Uses qualified health system savvy medical or behavioral health professionals with the ability to perform independent patient assessments.
- Professionals have completed training in comprehensive cross-disciplinary case management procedures used at their organization.
- Uses a triage process to uncover a subset of high-need, high-cost patients.
- Understands and uses a relationship-based assessment and intervention process.
- Assessment sorts and prioritizes clinical and non-clinical barriers to improvement.
- Assessment addresses biopsychosocial and health system issues.
- Care plan is built using the findings from the prioritizing assessment.
- Pursues patient and case manager agreed-upon care plan goals.
- Creates collaborative actions to achieve goals.
- Longitudinal assistance with “assist to target” approach.
- Collaboration and coordination of assistance with patient clinicians and case management Medical Directors in “treat to target” and “assist to target” activities.
- Documents whether care plan goals are achieved.
- Changes assistance based on recorded goal outcomes.
- Adds less critical care plan goals as high-priority goals are accomplished.
- Big picture longitudinal clinical, functional, satisfaction, quality of life, and fiscal outcome documentation.
- Moves to definable case closure (graduation) and self-management when goals are achieved or maximum benefit has occurred.
- Organizational contracts that foster longitudinal health outcome-oriented case management in patients with health complexity.
- Case management service contracts that measure case manager success in terms of patient health, functional improvement, and cost reduction.
- A case management practice environment conducive to complexity-based longitudinal, multi-venue, cross-disciplinary case management.
- Collaborative support from physicians trained in the use of and support for outcome-oriented case management.

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Appendix 21: Core ICM Practices Needed to Implement the Full ICM Components

- Use of competency level 3C or above (Table 1.7 in Physician's Guide) licensed or certified health professionals with the ability to perform independent patient assessments as ICM mangers; non-licensed personnel (competency level 1C) may be used to provide assistance to ICM managers; early career professionals (competency level 2C) may provide assistance to or be supervised as ICM managers by competency level 3C or above managers.
- All program participants have Certificates of Completion for ICM training.
- Use of pre-ICM triage procedures to uncover patients with high need and high cost.
- Use of the ICM-based relationship building scripted dialogue for patient assessments.
- Consistent anchoring of ICM-CAG medical and behavioral, clinical and non-clinical complexity item assessment.
- Use of patient and ICM manager agreed upon ICM-CAG findings to build a collaborative patient-manager care plan using the ICM (CP) template, which prioritizes goals and actions.
- Longitudinal, cross treatment platform assistance with escalation of assistance/treatment ("assist and treat to target") when improvement is not occurring.
- Active involvement of clinicians and ICM Medical Directors with ICM managers in implementing longitudinal assistance and support to patients.
- Use of the Care Plan Outcome (CPO) template to document care plan intervention outcomes.
- Use of Patient-Centered ICM Performance (PCIP) template to record predetermined changes in measured clinical, functional, satisfaction, quality of life, and fiscal outcomes.
- Graduation readiness based on changes in documented ICM-CAG vulnerability if returned to standard care.
- Follows ICM graduation guidelines for return to standard care.
- Organizational practice environment conducive to complexity-based longitudinal, multi-venue, cross-disciplinary ICM.
- ICM organizational contracts that measure ICM manager success in terms of patient health, functional improvement, and cost reduction.
- Collaborative support from physicians trained in the use of and support for outcome-oriented ICM.

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Glossary of Case Management Terms

Accountable Care Organizations (ACOs) Groups of providers who are responsible for improving the total health of a population of patients while accepting financial risk for the cost of their care.

Adherence A patient's decision or ability to follow the *agreed-upon* evaluation and treatment recommendations of their treating clinicians (see compliance).

Advance directive A legal document that spells an individual's decisions about end-of-life care ahead of time.

Advocacy Any beneficial activity, such as actively defining and supporting clients'/patients' rights, decisions, choices, privacy, and autonomy or promoting information about and/or access to the most effective and timely healthcare services, resources, and support, that is performed on behalf of others.

Advocate Any person (caregiver, family member, healthcare professional, etc.) who can assist a client/patient in defining and supporting his/her rights, decisions, choices, privacy, and autonomy or promote information about and/or access to the most effective and timely healthcare services, resources, and support. An advocate can have a variety of backgrounds depending on the healthcare setting and may focus on different aspects of issues. Patient advocates can be hired by different work setting, including but not limited to acute care facilities, long-term and rehab facilities, health plans, legal, private, etc. An effective advocate must have working knowledge of healthcare processes, healthcare reform, community resources and services, legal and regulatory factors, and communication technology.

Affordable Care Act (ACA) Comprehensive health insurance reform legislation enacted in 2010 designed to expand coverage, which holds insurance companies and networked delivery systems accountable for health outcomes and the total cost of care, lower healthcare costs, guarantee more choice, and enhance the quality of care for all Americans.

Affordable Care Act, Section 2703 Allows States to receive additional Federal support under the Medicaid State plan for the enhanced integration and coordination of primary, acute, behavioral health (mental health and substance use), and long-term services for support of persons across the life span with chronic illness that are being treated in health homes.

Assessment, case management The process of uncovering strengths and needs of clients/patients through information provided by the client/patient and/or obtained from other sources of information with the client/patient's permission, including but not limited to family, guardians/caregivers, providers/health records, employers, health plans, law enforcement, etc.

Assessment, comprehensive case management The process of uncovering current and ongoing biopsychosocial and health system strengths as well as barriers to health improvement through information provided by the client/patient and/

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or obtained from other sources of information with the client/patient's permission, including but not limited to family, guardians/caregivers, providers/health records, employers, health plans, law enforcement, etc.

Assist to target A systematic approach to patient assistance and support in which case managers pursue measured clinical and non-clinical care plan goals in real time for improvement and stabilization. If they do not occur as expected, case managers or physicians associated with the case management program collaborate in identifying next steps and escalate care until clinical, functional, and life circumstance outcomes are maximized.

Assistance and support managers, health related Individuals with sufficient background and/or specific training to employ techniques designed to promote health-related program outcomes.

Assistance and support services, health related The targeted role of assisting clients/patients initiate and/or follow through on health-improving activities by individuals with sufficient background and/or specific training to accomplish desired health-related program outcomes. ("Assistance and support" is an encompassing term that includes the full range of management activities from wellness coaching to integrated complex case management. Case management, defined below, is a subset of assistance and support services.)

Assistance and support services, high intensity (also called complex case management) Typified by longitudinal clinical and non-clinical assistance to patients with health complexity by experienced licensed professionals, such as nurses and social workers, who generally have certification in case management, e.g., comprehensive case managers and intensive case managers.

Assistance and support services, integrated high intensity (also called integrated complex case management) Typified by longitudinal clinical and non-clinical assistance to patients with health complexity by experienced licensed professionals, such as nurses and social workers, who generally have training and Certificates of Completion in integrated case management as managers, e.g., adult integrated case managers and pediatric integrated case managers.

Assistance and support services, low intensity Typified by assistance to clients or patients for hours to weeks by care managers that do not require health-related expertise in order to successfully complete the *process* outcome-based assistance and support activities, e.g., wellness coaches and employee assistance counselors.

Assistance and support services, medium intensity (also called case management) Typified by the use of assistance and support managers with health-related education or experience in the healthcare industry that would allow them to work with ill patients for which targeted active assistance is desirable if patients are to more consistently show improved health outcomes, e.g., disease managers and nursing home managers.

Assistance and support, to clients/patients related to healthcare The process of providing help to clients/patients in overcoming biopsychosocial and health system barriers to improvement by promoting access to and follow through on needed clinical and non-clinical services through the following mechanisms:

(a) encouraging the coordination of multidisciplinary, cross-platform care, (b) assuring escalation of care when improvement is not occurring, and (c) providing multi-domain education about, facilitation of, and advocacy for improved personal, life circumstance, and medical intervention issues that promote health stabilization. ("Assistance" to patients by case managers does not include "treatment" of illness in patients or the application of "therapy," though case managers may promote intervention by clinicians and follow through on treatment recommendations that are likely to improve client/patient outcomes.)

Background, case manager The composite of professional health-related education and experience in an area of expertise, such as nursing and social work, that suggests the level of knowledge and skills an individual can bring in application of assistance and support management work processes.

Barriers to improvement Clinical and non-clinical health and life circumstances that are associated with impairment of a person's ability to adhere to healthy behaviors or to follow through on activities that lead to stabilized health and maximal function.

Barriers to improvement, clinical Medical or behavioral health conditions, treatments, and/or illness-related factors, e.g., acuity, severity, appropriateness of treatment, treatability, and illness interactions, that are associated with impairment of a person's ability to stabilize health and maximize function.

Barriers to improvement, non-clinical Life circumstance, non-illness-related factors, e.g., social support, insurance status, financial resources, and housing stability, that are associated with impairment of a person's ability to stabilize health and maximize function.

Behavioral health disorders Both mental health *and* substance use disorders. (The term "behavioral health" alone also refers to stress-related conditions and life circumstances contributing to disabling psychological symptoms and unhealthy behaviors.)

Benefit management See utilization management.

Benefit managers See utilization manager.

Care coordination, health related The process of helping clients/patients understand, organize, secure, integrate, and improve the administration of the care and cross-communication of providers, including health-related personnel and health facilities, that are necessary to accomplish the goals of a case management care plan. (This is one of several activities commonly included in case management.)

Care coordinators, health related Individuals with sufficient background and/or the specific training to promote cross-platform and cross-disciplinary communication and care delivery among service providers for clients/patients.

Care plan, ICM Mutually defined case manager and client/patient multi-domain goals, based on a completed complexity assessment, that are linked to a *written* timeline of prioritized clinical and non-clinical assist activities designed to reverse biopsychosocial and health system barriers to improvement and lead to measured health outcomes. (The "ICM care plan" is an iterative, dynamic longitudinal document in which adjustments to assist activities are made when goals are not being reached. Clients/patients graduate to self-management when goals are achieved.)

Care plan actions Based on the case manager assessment, actions are activities that the case manager, patient, and others take to achieve care plan goals in a timely fashion.

Care plan, case management Delineated, often longitudinal, assistance in achieving mutually defined care manager and client/patient-prioritized goals through linked case manager and client/patient activities (written plan of care), based on findings of an assessment of client/patient needs and strengths in the area of targeted assistance procedures.

Care plan development Translation of findings from an assistance and support assessment into goals and actions designed to reverse identified barriers to improvement.

Care plan goals Based on the case manager assessment, goals identified on where the patient and case manager wish to be regarding specific barriers to improvement at a certain point in the management process, e.g., a week, month, or year.

Care plan, integrated case management Delineated longitudinal multi-domain assistance in achieving mutually defined care manager and patient-prioritized clinical and non-clinical goals through linked case manager and patient activities (written plan of care), based on findings of a biopsychosocial and health system assessment of complex patient needs and strengths.

Case management, health related A subset of assistance and support activities in which health-related help, characterized by education, health facilitation, care coordination, patient navigation, promotion of "treat to target," and client/patient advocacy, is provided to collaborating clients/patients and their clinicians by licensed and trained health professionals, usually nurses and social workers, to disentangle and reverse barriers to health improvement and stabilize health by connecting client/patient assessment findings to a care plan.

Case management, ICM A subset of case management in which the longitudinal application of *biopsychosocial and health system* assistance, characterized by education, clinical and non-clinical health facilitation, care coordination, patient navigation, promotion of "treat to target," and client/patient advocacy, is provided to collaborating clients/patients with multidisciplinary and complex health challenges and their clinicians primarily by a single licensed and ICM trained health professional until disentangled and prioritized barriers to improvement from a comprehensive assessment have been reversed, health is stabilized, preventive measures have been initiated, and maximum benefit has occurred.

Case management training Education in the specific knowledge base and skills needed to effectively and efficiently deliver a particular model of case management. (Effective and efficient value-added case management requires the development of an augmented knowledge base and specialized skills in order for even seasoned licensed professionals to add value. Thus, training in core ingredients of the case management model being used is almost always necessary, regardless of the background of professionals delivering services.)

Case manager Licensed or certified health professionals with credentials that allow independent assessments, usually nurses and social workers, with backgrounds and specific training that allows them to disentangle and assist clients/patients overcome targeted barriers to health improvement of health conditions through implementation of a care plan (also see assistance and support services, medium intensity, and above).

Case manager assistants Licensed or non-licensed personnel with sufficient understanding of case management and the importance of health stability to be able to assist and support the services provided to clients/patients by a case manager, e.g., make calls for appointments, find providers, arrange care conferences, etc.

Case manager, competency levels Four defined levels of case manager capabilities (Levels 1C to 4C see Table 1.7) based on education, experience, and training in specific types of case management delivery, which are associated with case management roles and activities.

Case manager, complex Experienced licensed health professionals, usually nurses and social workers, with backgrounds and specific training that allows them to disentangle and assist with overcoming barriers to health improvement in patients with multiple health conditions, or health complexity, through implementation of a comprehensive longitudinal care plan (also see assistance and support services, high intensity).

Case manager, ICM Licensed health professionals, usually nurses and social workers, with backgrounds and specific training that allows them to disentangle and score barriers to improvement through a comprehensive biopsychosocial and health system assessment. Findings are connected to prioritized activities, characterized by education, clinical and non-clinical health facilitation, care coordination, patient navigation, application of the “treat to target” approach, and client/patient advocacy, as part of a written plan of care so that barriers are reversed, health is stabilized, and maximum benefit has occurred in patients with health complexity.

Children with special healthcare needs (CSHCN) Children who have, or are at increased risk for, chronic conditions affecting physical, developmental, behavioral, or emotional health resulting in increased rates of healthcare service utilization compared to the general pediatric population.

Chronic care model A healthcare delivery model developed for treatment of chronic health conditions that emphasize patient self-management support, delivery system redesign, provider clinical decision support, enhanced healthcare information systems, quality improvement activities, and community engagement.

Complexity Intervention Unit A full inpatient general medical service that has most or all acute inpatient psychiatric treatment capabilities, e.g., psychiatric safety features, cross-disciplinary policies and procedures, psychiatric co-attendings, and psychiatric assessment and intervention services. (These used to be called “Medical Psychiatry Units” but maturation of value-based understanding indicates that they require organization and administration under the direction of the medical, rather than behavioral health services, in order to bring value.)

Compliance A patient's decision or ability to follow a physician's evaluation and treatment recommendations. Unlike "adherence," "compliance" implies that the physician is the medical authority and patients not following recommendations are at fault.

Cross-sectional case management A model of case management in which an assigned case manager personally follows patients only during a discrete period of health risk, e.g., during a hospitalization or in a specific clinic, during a period of care transition, during a period of workplace disability, and during exacerbation of a discrete illness.

Disability manager Health-related professionals who help insure that employees with non-work-related injuries or illnesses get the healthcare support they need while on disability benefits.

Discharge manager (transitions of care) Individuals who confirm that medication reconciliation, timely outpatient clinician appointments, and filled prescriptions for recently discharged hospital inpatients have occurred.

Disease management A subset of case management in which health-related assistance, characterized by education, health facilitation, care coordination, patient navigation, promotion of "treat to target," and client/patient advocacy, is given to all collaborating patients within a population who have one or more selected chronic health conditions by licensed and trained health professionals, usually nurses and social workers, with the goal of reversing barriers to improvement and stabilizing health by connecting client/patient assessment findings to a care plan.

Disease manager Licensed health professionals, usually nurses and social workers, with backgrounds and specific training that allows them to assist patients with one or more selected chronic health condition overcome barriers to illness improvement and stabilize health through implementation of a care plan.

Durable medical equipment (DME) Any medical equipment used in the home to aid in a better quality of living, e.g., oxygen tanks, hospital bed, and wheelchair.

Employee assistance program (EAP) counselor Individuals who help employees address workplace, family, financial, and health issues to maximize well-being, health, and workplace productivity. (Some EAP programs also include crisis intervention and supportive therapy.)

Empowerment Providing clients/patients with sufficient understanding of their health-related circumstances so that they consider themselves able to personally advocate for their own healthcare needs.

Exchanges (healthcare) A virtual marketplace for insurance products, available in the United States as part of the Affordable Care Act, in which applicants for insurance are intended to have access to and the ability to compare affordable insurance plans without increased expense for preexisting conditions.

Formulary Medications that are approved for use and payment as part of an insurance benefit plan. May include medication "tiering" in which the use of some medications is encouraged by a greater percentage of cost coverage.

Functional outcome Improvement or worsening of the ability to perform age-appropriate activities in comparison to the normal population.

Gantt chart A chart illustration of a project schedule, including start date, timeline events, and finish date.

Gap closure The reduction in average difference (the gap) in total cost of care for two populations of patients after the application of a cost saving intervention. For example, the top 5 % of patients with chronic medical illnesses who have health complexity may, on average, use $100,000 worth of annual healthcare services compared to $10,000 for patients with chronic illnesses but no health complexity. If after a year of intervention, such as ICM, the gap for the average annual total cost of care moves from $90,000 ($100,000−$10,000) to $85,000 ($95,000−$10,000) for complex patients, then the gap closure would be 5.5 % (5000/90,000). The gap identifies average savings/patient, which can be used to estimate total program savings and the potential for a return on investment, based on the cost of the ICM program.

Health coach (wellness counselor) Individuals who assist clients at risk for developing health conditions or complications from existing conditions in understanding and implementing habits of healthy behavior.

Health complexity Interference with the achievement of expected or desired health and cost outcomes due to the interaction of biological, psychological, social, and health system factors when patients are exposed to standard care delivered by their doctors.

ICM actions The steps that the patient, ICM manager, treating clinicians, and other stakeholders in the patient's outcomes agree to take to achieve ICM goals.

ICM-CAG See Integrated Case Management-Complexity Assessment Grid.

ICM goals Where the ICM manager and patient wish to be, related to a barrier to improvement at a future time, e.g., a week, month, or year.

Individualized care Augmentation of "standard care" by case managers tasked with the role of uncovering and assisting patients with both clinical and non-clinical barriers to improvement. (Individualized care falls in a continuum from a specific area of nonstandard health support, e.g., discharge planning, disease management, and disability management, to a comprehensive approach to total health improvement, e.g., integrated case management.)

Individualized Educational Program (IEP) A written document provided by the public educational system that identifies the unique strengths and weaknesses of children and specific special educational supports required to support their academic progress. The IEP is provided for children with an identified physical, cognitive, learning, developmental, or emotional/behavioral disability that interferes with academic performance.

Integrated Case Management-Complexity Assessment Grid (ICM-CAG) Adaptation of the INTERMED complexity assessment tool for use in the US health system.

Integrated Case Management-Complexity Assessment Grid, adult (ICM-CAG) Twenty risk-based complexity items in a biopsychosocial and health systems domain adult grid that allows action-oriented complexity score anchoring using the integrated case management approach to patient assistance.

Integrated Case Management-Complexity Assessment Grid, pediatric (PICM-CAG) Twenty-five risk-based child/youth complexity items in a biopsychosocial and health system domain pediatric grid that allows action-oriented complexity score anchoring using the integrated case management approach to patient assistance.

INTERMED Multi-domain complexity assessment tool developed and standardized in Europe by a multidisciplinary group of medical researchers.

Longitudinal case management A model of case management in which an assigned case manager personally follows patients across the care continuum over time until barriers to improvement have been overcome and health is stabilized.

Management, related to healthcare Facilitation of improved health outcomes through reversal of barriers to improvement. (Excludes benefit, or utilization, management.)

Manager, case management Licensed or certified health professional with independent assessment capabilities assisting and supporting improved health and cost outcomes. (Excludes benefit, or utilization, manager.)

Medical Director, case management Primary care or specialty physicians tasked with physician support for a case management program.

Medicare Shared Savings Program (MSSP) US government contracting program designed to facilitate coordination and cooperation among providers to improve the quality of care for Medicare Fee-For-Service (FFS) beneficiaries and reduce unnecessary costs.

Outcome, measured health During the process of providing assistance and support services, this is documentation of defined changes in (1) targeted health status (BP change, FEV1 change, PHQ-9 change, etc.), (2) function (exercise tolerance, employment, return to hobbies, sexual activity, etc.), (3) cost (pre-/post change in healthcare service use, in healthcare spend, in hospitalizations, etc.), (4) quality of life (pre-/post analogue scale, days per week feeling healthy), and (5) satisfaction with care (availability of services during care process, visual analogue scale).

Outcome, process During the process of providing assistance and support services, this is documentation of the achievement of health-related processes that would logically be expected to lead to measured health outcomes, e.g., filled prescriptions, appointment attendance, timely follow-up, communication among providers, etc. (Process outcomes are proxies for measured health outcomes, which may or may not actually occur.)

Patient activation or engagement The degree to which a client/patient becomes actively involved in trying to improve his or her own health. (Activation or engagement may be ineffective if the client/patient does not understand or pursue what is needed to improve their health condition, does not have skills or ability to access or initiate needed care, or does not have the motivation or confidence to maintain health-improving activities.)

Patient-Centered ICM Performance Recording document for clinical, functional, quality of life, satisfaction, and fiscal outcomes in patients receiving ICM assistance and support.

Patient-centered medical home A primary care clinical model that emphasizes comprehensive care, patient-centeredness, care coordination, accessibility, and quality and safety.

Patient navigation, health related The process of helping clients/patients find needed healthcare providers, health-related services, and health-impacting non-clinical support to accomplish the goals of a care plan despite complicated healthcare systems, health-inhibiting personal situations, and destructive living environments. (This is one of several activities commonly included in case management.)

Patient navigators, health related Individuals with sufficient background and/or the specific training to understand client/patient needs, the health system, and client/patient's personal and living situation sufficiently that they can help clients/patients find providers, services, and personal, social, financial, and living situation support.

Patient Protection and Affordable Care Act See Affordable Care Act (ACA) above.

Peer support personnel Individuals, usually without a background in healthcare-related service delivery, who assist clients/patients in overcoming barriers to improvement as part of assistance and support programs due to their direct experience with challenges in the healthcare delivery system as a result of personal treatment for a medical or behavioral health illness that is usually chronic.

Pharmacy benefit managers Companies that contract with or are owned by health plans that are responsible for processing and paying prescription drug claims, developing and maintaining an insurance formulary, contracting with pharmacies, and negotiating discounts and rebates with drug manufacturers.

Population health (wellness) management Improving the health of the population through the delivery of effective preventive services, the promotion of healthy lifestyle behaviors, the use of community indices of health, and the assessment of environmental factors.

Prior authorization An approval process used by some health insurance companies before they will pay for a prescribed procedure, service, or medication.

Self-management, health related Clients/patients assume responsibility for understanding their own illnesses and illness complications, finding appropriate providers and treatment, following through on treatment recommendations, managing non-clinical impediments to health maintenance, and using preventive services.

Social determinants of health Factors that contribute to physical and emotional well-being that are a product of the physical and social context in which individuals live and work, e.g., race/ethnicity, socioeconomic status, education, social cohesion, and neighborhood of residence.

Standard Care Population-based *illness-focused* treatment for health conditions and issues (clinical care) typically provided by physicians and other treating clinicians and the ancillary service sector in inpatient, outpatient, and post-acute care settings. (Standard care falls in a continuum from very selective [specialty] to broad-based [primary care] but is always governed by a focus on patients' illnesses and their direct treatment. It is largely driven by the way that medical care delivery is reimbursed.)

Training, case manager Specific instruction in how to perform case management activity for a defined population or for an intended purpose. It complements a case management professional's education and experience by providing them with education about work processes and desired outcomes in a designated area of assistance and support, e.g., transitions of care procedures, ICM, and workers' compensation.

Transitions of care See discharge manager.

Treating clinicians (practitioners) Licensed medical or behavioral professionals with training that allows them to diagnose and provide treatment for one or more health conditions and to be paid directly for the services delivered through a recognized national payment system, e.g., physicians, nurse practitioners, licensed psychologists, etc. (Payment for services delivered through billing by another licensed provider does not qualify a professional as a treating clinician.)

Treatment plan Interventions recommended by treating practitioners, e.g., physicians, nurse practitioners, physician assistants, psychologists, and other therapists, focused on improvement and/or resolution of illness-related signs and symptoms. (Case managers do not institute treatment plans; however, they do support adherence to or treating provider recommended adjustments in them so that clinical outcomes can be maximized based on care plan follow-up assessments.)

Treat to target Real-time measurement of illness-specific targets for improvement and stabilization by treating practitioners. If they do not occur as expected, physicians identify next steps in escalated care, implement treatment adjustments or referrals, and follow the patient until clinical outcomes are maximized. Case managers support "treat to target" activities as part of the "assist to target" process.

Triple Aim Developed by the Institute for Healthcare Improvement, a framework for optimizing health system performance by focusing on improving outcomes related to the patient experience, population health, and cost.

Utilization management Adjudication that a patient has insurance coverage for a desired medical service or has a medical condition that would benefit from application of a covered medical service (medical necessity). (Utilization management is considered "benefit" management not "case" management.)

Utilization manager Individuals who determine if a patient has insurance coverage for a medical service or a medical condition that would benefit from a covered medical service (medical necessity). (Utilization managers are considered "benefit" managers not "case" managers.)

Wellness counselor See health coach.

Abbreviations

ACO	accountable care organization
ACA	Affordable Care Act of 2010 (also known as the Patient Protection and Affordable Care Act)
ACE	adverse childhood events
ADHD	Attention Deficit and Hyperactivity Disorder
AHRQ	Agency for Health Research and Quality
BH	behavioral health (includes both mental health and substance use disorders)
CAG	complexity assessment grid
C-CD	complex chronic disease
CEO	Chief Executive Officer
CMO	Chief Medical Officer
CNO	Chief Nursing Officer
CHW	community health worker
CM	case management/manager
CMSA	Case Management Society of America
CMS	Center for Medicare and Medicaid Services
COE4CCN	Center of Excellence on Quality of Care Measures for Children with Complex Needs
CP	table designed to record the prioritized barriers to improvement, associated care plan goals, and the actions that would be necessary to achieve the goals
CPO	table designed to measure outcomes of a care plan for individual patients
CPS	child protective services
CSHCN	Children with Special Healthcare Needs
DME	durable medical equipment
EHR	electronic health record
ER	emergency room
HBA1c	hemoglobin A1c
HCUP	Healthcare Cost and Utilization Project
ICD-9	International Classification of Diseases, 9th edition
ICM	integrated case management
ICM-CAG	integrated case management-complexity assessment grid (generally refers to the adult version)
ICM manager	a case manager that uses integrated case management methodology (generally refers to the adult ICM)
IEP	individualized educational program
MBHO	managed behavioral health organization
MCCRN	Multiple Chronic Condition Research Network

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5

MEPS	Medical Expenditure Panel Survey
MH	mental health
MHPAEA	Mental Health Parity and Addiction Equity Act
MSSP	Medicaid Shared Savings Program
NC-CD	non-complex chronic disease
NICU	neonatal intensive care unit
ODD	oppositional defiant disorder
OSA	obstructive sleep apnea
PCMH	Patient Centered Medical Home
PICM	pediatric integrated case management
PICM-CAG	pediatric integrated case management-complexity assessment grid
PICM manager	a case manager that uses pediatric integrated case management methodology
PMPM	per member per month (claims costs)
PPACA	Patient Protection and Affordable Care Act
PTSD	post-traumatic stress disorder
RCT	randomized controlled trial
ROI	return on investment
PCIP	table designed to provide measured patient-centered health outcomes associated with integrated case management in five areas: clinic, functional, satisfaction, quality of life, and fiscal
RVU	Relative Value Units
SA	substance abuse
SUD	substance use disorder
UM	utilization management
VAS	visual analog scale

Index

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5